



# ANNUAL PUBLIC HEALTH REPORT

OF THE

PROVINCE OF ASSAM

FOR THE YEAR

1923

BY

MAJOR T. D. MURISON, I.M.S.,  
OFFG. DIRECTOR OF PUBLIC HEALTH, ASSAM.



SHILLONG :  
PRINTED AT THE ASSAM GOVERNMENT PRESS.

---

1924.

*Price 12 annas.]*

*[Price 1s. 6d.]*

Agents for the sale of Books published by the ASSAM Government.

Agents in India.

- |  |  |
|--|--|
| (1) Messrs. Thacker, Spink & Co Calcutta.  | (11) Messrs. Students & Co., Cooch Bihar.  |
| (2) Messrs. W. Newman & Co., Calcutta.   | (12) Messrs. Vas & Co., Madras.  |
| (3) Messrs. S. K. Lahiri & Co., Calcutta.  | (13) The Standard Literature Co. Limited, 23-1, Old Court House Street, Calcutta,            |
| (4) Messrs. A. M. and J. Ferguson, Ceylon.   | (14) The Standard Book Stall, Karachi.   |
| (5) Messrs. R. Cambray & Co., 6 and 8/2, Hastings Street, Calcutta,                          | (15) Mr. Mangaldas Harkisandas, Surat.   |
| (6) Messrs. Thompson & Co., Madras.  | (16) Messrs. Karsandas, Narandas & Sons of Surat.  |
| (7) Babu Hari Ram Dhar, B.A., Popular Library, Dacca.  | (17) Munshi Seeta Ram, Managing Proprietor, Indian Army Book Depôt Juhi, Cownpore.           |
| (8) Messrs. D. B. Taraporevala Sons & Co., 103 Meadon Street Fort, Post Box No. 187. Bombay. | (18) Proprietor, New Kitabkhana, Poona.  |
| (9) The Indian School Supply Depôt, 309, Bow Bazar Street, Calcutta.                         | (19) The Association Press, Calcutta.  |
| (10) Messrs. Rai M. C. Sarkar Bahadur & Sons, 90-2A, Harrison Road, Calcutta.                | (20) The Manager, The Hitavada Craddock—Town, Nagpur.  |
|  | (21) Messrs. Butterworth & Co., (India) Limited. Post Box 251, 6, Hastings Street, Calcutta. |

Agents in Great Britain.

- |   |   |
|---|---|
| (1) Messrs. Constable & Co., 10, Orange Street, Leicester Square, W. C.   | (8) Messrs. W. Thacker & Co., 2, Creed Lane, London, E. C.  |
| (2) Messrs. Kegan Paul, Trench, Trübner & Co : 68—74, Carter Lane, E. C., London, Oriental Department, 39, New Oxford Street, London, W. C. | (9) Messrs. Luzac & Co., 46, Great Russell Street, London W. C.                                       |
| (3) Mr. B. Quaritch, 11, Grafton Street, New Bond Street, W.  | (10) Mr. J. Fisher Unwin, Limited 1 Adelphie Terrace, London, W. C.                                   |
| (4) Messrs. P. S. King & Son, 9, Bridge Street, Westminster, S. W., London.   | (11) Messrs. Weldon and Wesley Limited, 2, 3 & 4, Aurther Street, New Oxford Street, London, W. C. 2. |
| (5) Mr B. H. Blackwell, 50 and 51, Broad Street, Oxford.  | (12) Messrs. Oliver and Boyd, Tweedale Court, Edinburgh.  |
| (6) Messrs. Deighton Bell & Co., Limited, Cambridge.  | (13) Messrs. E. Ponsonby, Ltd., 116, Grafton Street, Dublin.  |
| (7) Messrs. Grindlay & Co., 54, Parliament Street, S. W. London.  | (14) Messrs. East and West Limited, 3, Victoria Street, London, S. W. 1.                              |

Agents on the Continent of Europe.

- |   |                                    |
|---|------------------------------------|
| (1) M. Earnest Leroux, 28, Rue Bonaparte, Paris.    | (3) M. Otto Harrassowitz, Leipzig. |
| (2) MM. Friedländer & Sohn 11, Carlstrasse, Berlin. | (4) Martinus Nijhoff, The Hague.   |

SHILLONG:

PRINTED BY H. H. KING, SUPERINTENDENT, ASSAM GOVERNMENT PRESS.

No. 3777.

FROM

MAJOR T. D. MURISON, I.M.S.,  
OFFG. DIRECTOR OF PUBLIC HEALTH, ASSAM,

TO

THE SECOND SECRETARY TO THE GOVERNMENT OF ASSAM.

*Dated Shillong, the 12th May 1924.*

SIR,

I HAVE the honour to submit herewith the Annual Public Health Report of the Province of Assam for the year 1923.

Your obedient servant,

T. D. MURISON, *Major, I.M.S.,*  
*Offg. Director of Public Health, Assam.*





Digitized by the Internet Archive  
in 2019 with funding from  
Wellcome Library

<https://archive.org/details/b31680756>

[Maximum limit of narrative portion of the report, 30 pages]

## CONTENTS.

### SECTION I.

#### METEOROLOGY.

	PARA.	PAGE.
Meteorological conditions—Relation to the price of food-grains and vital statistics ... ..	1	1

### SECTION V.

#### GENERAL POPULATION—VITAL STATISTICS.

General Census figures ... ..	2	2
Birth registration, General ... ..	3	3
Birth registration in urban areas ... ..	4	3
Birth registration in rural areas ... ..	5	3
Death registration, General ... ..	6	3
Death registration in urban areas ... ..	7	3
Death registration in rural areas ... ..	8	3
Registration in compulsory areas ... ..	9	4
Registration in Hill Districts ... ..	10	5
Registration in Tea Gardens ... ..	11	5
Registration on Railways ... ..	12	6
Seasonal incidence of births and deaths ... ..	13	6
Mortality according to age, sex and class ... ..	14	6
Inspection of village registers of vital statistics ... ..	15	6
General accuracy of vital statistics and improvements effected during the year ... ..	16	7

### SECTION VI.

#### HISTORY OF THE CHIEF DISEASES.

Chief causes of mortality (Influenza) ... ..	17	7
Cholera ... ..	18	7
High rates of mortality from cholera in individual towns and rural areas ... ..	19	8
Cholera in tea estates ... ..	20	8
Small-pox ... ..	21	8
High rates of mortality from small-pox in individual towns and rural areas ... ..	22	9
Fevers ... ..	23	9
High rates of mortality from fevers in individual towns and rural areas ... ..	24	10
Kala-azar ... ..	25	10
Dysentery and diarrhoea ... ..	26	13
Plague ... ..	27	13
Other causes of mortality ... ..	28	13

### SECTION IX.

#### SANITARY WORKS—CIVIL.

General ... ..	29	13
Municipal expenditure on sanitation... ..	30	14
Sanitary works ... ..	31	15

SECTION X.

GENERAL REMARKS.

					PARA.	PAGE.
Village sanitation	...	...	...	...	32	15
Sale of quinine	...	...	...	...	33	16
Pilgrim traffic and fairs	...	...	...	...	34	16
Railway camps	...	...	...	...	35	16
Public Health Laboratory	...	...	...	...	36	16
Emigration ...	...	...	...	...	37	17
Personal proceedings	...	...	...	...	38	17

SECTION XI.

Report of the Sanitary Board	...	...	...	...	39	18
------------------------------	-----	-----	-----	-----	----	----



# ANNUAL PUBLIC HEALTH REPORT

OF THE

## PROVINCE OF ASSAM

FOR THE YEAR

1923.

---

### SECTION I.

#### METEOROLOGY.

The following note on the meteorological conditions of the province of Assam during the year 1923 has been kindly furnished by the Director-General of Observatories:—

I. *The cold weather period, January and February.*—There was hardly any rain in January and maximum temperature was slightly above normal. In February on the other hand rainfall was in excess by 29 per cent. and cloud proportion and minimum temperature were inclined to be high.

II. *The hot weather period, March to May.*—Only 13 per cent. of the normal rainfall was received in the month of March; in keeping with this unusual dryness cloud proportion was in distinct defect, and the air was drier and much hotter than usual, the mean maximum of the month being 4.50 above normal. There was an improvement in the next two months, April recording a normal rainfall and May a large excess. Skies were more clouded than usual in both the months. Minimum temperature was slightly above normal in April and the maximum slightly below normal in May.

III. *The monsoon period, June to September.*—Rainfall was in defect in July and August. This was counterbalanced by the excess in the other two months, so that the total of the season was normal. Cloud proportion was in excess in July and September. In August, which had the greatest deficiency of rainfall, maximum temperature was slightly above normal.

IV. *The retreating monsoon period, October to December.*—Rainfall was normal in December, in slight defect in October and in large defect in November. Cloud proportion was below normal in October and above it in December. Maximum temperature was inclined to be high in the last two months of the period.

The monsoon was on the whole well distributed during the year and the amount of common rice purchasable for one rupee during the year under report was on an average 7 seers and 14 chhataks, which was 5 chhataks more than that obtainable for the same price in the preceding year.

Price of food-grains and their connection with vital occurrences.

### SECTION II.

#### EUROPEAN ARMY.

(No remarks.)

### SECTION III.

#### NATIVE ARMY.

(No remarks.)

## SECTION IV.

## JAILS.

(No remarks.)

## SECTION V.

## GENERAL POPULATION.

*Vital statistics.*

2. The report deals with the plains districts of the province, the population of which according to the census of 1921 was 6,852,242.\* This has been used as the basis for calculation of ratios. Registration in selected areas of the hill districts is shown separately in paragraph 10 of this report. The birth-rate of the province during 1923 was 28·82 per mille and is compared below with the ratios recorded for other provinces of India:—

General census figures. Provincial birth and death rates. Comparison with other provinces.

Provinces.	Birth-rate.		
	1917-21.	1922.	1923.
1	2	3	4
Assam ... ..	28·60	28·43	28·82
Bengal ... ..	30·2	27·4	29·9
Bihar and Orissa ... ..	35·47	35·03	37·02
Central Provinces ... ..	40·55	35·80	45·63
Madras ... ..	28·4	30·0	33·1
Burma ... ..	32·51	29·69	29·52
Bombay ... ..	31·62	32·39	35·57
United Provinces ... ..	37·66	32·17	36·04
Punjab ... ..	40·0	39·31	43·16
North-West Frontier Province ... ..	28·6	23·69	27·6

The recorded birth-rate was lower in Assam than in any province except the North-West Frontier Province.

The death-rate for the year 1923 was 23·54 as compared below with the rates recorded for other provinces of India:—

Provinces.	Death-rate.		
	1917-21.	1922.	1923.
1	2	3	4
Assam ... ..	32·18	26·85	23·54
Bengal ... ..	32·0	25·2	25·5
Bihar and Orissa ... ..	39·60	24·13	25·04
Central Provinces .. ..	53·20	29·31	30·53
Madras ... ..	27·7	21·0	22·2
Burma ... ..	28·64	22·23	20·81
Bombay ... ..	43·20	23·61	25·89
United Provinces ... ..	47·75	25·01	23·37
Punjab ... ..	39·2	22·67	30·94
North-West Frontier Province ... ..	35·4	21·68	23·7

\* This population is 2,125 less than that shown in the report of 1922, reasons being the transfer of the population of 493 from the Darrang district to the Balipara Frontier Tract, of 1,718 from the Lakhimpur district to the Sadiya Frontier Tract and of 86 from the Naga Hills to the Nowgong district (*vide* correction slips to the Census Report).



It will be seen that the death-rate of Assam does not compare unfavourably with the rates recorded in other provinces.

3. Births registered were 197,518 or 28·82 per 1,000 of the population against 28·43 in the previous year and 28·75, the quinquennial average. The highest birth-rates of the year were returned by Goalpara (33·35) and Cachar (31·76). Nowgong, which returned the lowest rate of 24·9 in 1922, has recorded a still lower rate of 23·19 in 1923, and the widespread prevalence of *kala-azar* in the district may account for this. Nowgong and Sylhet are the only two districts which returned birth-rates below those of 1922 and the quinquennial average. Vigorous measures are being taken to deal with *kala-azar* in these two districts. The natural increase of population, *i.e.*, excess of births over deaths per 1,000 of population for the year was 5·28 per mille, as compared with 1·58 in 1922, the increase being shared by all districts except Nowgong, presumably for the reason stated above.

4. During 1923 the birth-rate for towns amounted to 29·23 per mille of the population as compared with 27·69 in 1922, the number of Birth registration in urban areas. births being 4,361 and 4,046, respectively. Nazira reported the highest rate, 55·09. High rates were also recorded in Barpeta (46·54), Sibsagar (42·97), Goalpara (36·05) and Habiganj (34·47). The towns returning a rate below 20 per mille were Hailakandi (16·60), Doom Dooma (17·21) and Maulvi Bazar (18·89). All of them are small towns and their low rates were due to defective registration.

5. The total number of births registered in rural areas in 1923 was 193,157 or 28·81 per mille of population, as compared with 190,852 Birth registration in rural areas. and 28·45 in 1922.

Over rural circles the birth-rate varied from 51·10 for Bijni Duar Circle in Goalpara district to as low a figure as 5·27 for Margherita Circle in Lakhimpur district. Circles reporting rates above the provincial average for the year were 13 circles in Sylhet, 11 in Goalpara, 7 in Cachar, 6 in Kamrup, 5 in Darrang, 3 in Lakhimpur, 2 in Nowgong and 1 in Sibsagar. The low rates of 15·64 reported from Gahpur Circle in Darrang district, of 15·52 from Boko in Kamrup, of 14·13 from Jamunamukh in Nowgong and of 5·27 from Margherita in Lakhimpur appear to be due to defective registration in those circles.

6. Deaths registered during the year totalled 161,332, as compared with 184,057 in 1922, which represent annual ratios of 23·54 and 26·85, respectively, as compared with a quinquennial average of 32·77 per mille. The highest district death-rates were recorded in Goalpara (27·58), Sylhet (24·59) and Nowgong (24·05) and the lowest in Sibsagar (18·32). The death-rates in all districts in the year 1923 were lower than those of the previous year and of the quinquennium (1913-17) preceding the influenza years of 1918 and 1919.

7. The death-rate for urban areas for the year 1923 was 23·36, as compared with 23·49 in the preceding year and 25·30, the quinquennial average. The highest ratios in urban areas were recorded in Tezpur (32·02) due to respiratory diseases and diseases grouped under other causes, Habiganj (31·76) due to fevers and dysentery and diarrhoea, Barpeta (30·43) due to fevers and dysentery and diarrhoea, Doom Dooma (30·12) due to fevers and dysentery and diarrhoea, Gauhati (29·67) due to small-pox, fevers and respiratory diseases, Nowgong (28·17) due to small-pox and fevers, Dhubri (27·88) due to fevers and respiratory diseases and Goalpara (26·56) due to cholera and fevers. The ratio for the Tezpur Municipality proper should be 19·61 only, excluding deaths reported from Mental, Jail, Police and Emigration Hospitals and Charitable dispensary which are located within the municipal area.

8. The total number of deaths registered in rural areas in 1923 was 157,846 or 23·54 per mille of population, as compared with 180,625 Death registration in rural areas. and 26·92, respectively, in the previous year and 32·94, the quinquennial average.

Registration circles considered individually, the Jaintiapur circle in the Sylhet district reported the highest rate 38·47 which was due to fevers and diseases grouped under other causes. Other circles reporting high death-rates were Kalaigaon (37·28) due to fevers and diseases grouped under other causes and Panerihat (32·36) due to fevers in Darrang district, Bijni Duar (37·18) due to fevers and small-pox, Golokganj (35·50) due to cholera and fevers, Dudnai (31·14) due to fevers,



Guma (33·85) due to fevers, Mankachar (32·06) due to fevers, Chirang (30·66) due to fevers and small-pox, Sidli (30·37) due to fevers and cholera, and Goalpara (30·37) due to fevers in Goalpara, Madhabpur (33·89) due to cholera and fevers, Habiganj (31·69) due to cholera and fevers, and Lakhai (30·30) due to cholera and diseases grouped under other causes in Sylhet, Gauhati (32·16) due to fevers and cholera in Kamrup and Lumding (30·02) due to small-pox and fevers in Nowgong. The death-rates reported from Gahpur Circle (10·56) in Darrang district, Dhemaji (9·89) and Margherita (5·61) in Lakhimpur and Majuli (8·59) in Sibsagar are low and can only be explained by defective registration.

9. The annexed table shows the results of the enquiries conducted by the Vaccination Inspecting staff in compulsory urban areas to test the accuracy of vital statistics during the non-vaccination season of the year 1923 :—

Municipalities.	Unregistered vital occurrences detected during 12 months from October 1922 to September 1923.		Recorded vital occurrences during 12 months from October 1922 to September 1923.		Percentage of omissions.	
	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
1	2	3	4	5	6	7
Silchar ...	...	...	227	137	...	...
Hailakandi ...	1	...	34	57	2·86	...
Sylhet ...	10	1	415	335	2·35	·29
Karimganj ...	13	5	97	67	11·82	6·94
Maulvi Bazar ...	1	...	84	38	1·18	...
Habiganj ...	...	...	196	205	...	...
Sunamganj ...	6	4	81	44	6·90	8·33
Dhubri ...	17	7	185	186	8·42	3·63
Goalpara ...	18	14	209	161	7·93	8·00
Gauripur ...	72	44	41	49	63·72	47·31
Gauhati ...	26	19	435	464	5·64	3·93
Barpeta ...	16	9	526	340	2·95	2·58
Tezpur ...	8	8	226	261	3·42	2·97
Mangaldai ...	11	4	19	13	36·66	23·53
Nowgong ...	6	5	240	140	2·44	3·45
Jorhat ...	5	5	117	69	4·09	6·76
Sibsagar ...	37	8	257	158	12·59	4·82
Golaghat ...	13	4	113	61	10·32	6·15
Nazira ...	36	8	129	38	21·82	17·39
Dibrugarh ...	27	10	291	124	8·49	7·46
North Lakhimpur ...	3	1	56	38	5·08	2·56
Doom Dooma ...	...	...	15	21	...	...
Tinsukia ...	6	4	37	20	13·95	16·66
Shillong ...	...	...	550	232	...	...
Total ...	332	160	4,580	3,258	6·75	4·68

Four hundred and fifteen prosecutions were instituted and 301 convictions were obtained.

The percentage of omissions in registration detected in the Gauripur Union was high, and it appears to be due to the recent extension of the Act to the Union. Steps have been taken to prosecute the defaulters. In general the average fine inflicted for a failure to register an occurrence of a birth or death amounted to Re. 1-3.



10. The subjoined table shows the recorded birth and death-rates in hill districts :—

Registration in hill districts.

Districts.			1923.		1922.	
			Birth-rate.	Death-rate.	Birth-rate.	Death-rate.
1			2	3	4	5
Khasi and Jaintia Hills	...	..	27·31	16·59	29·96	15·47
Naga Hills	...	...	16·00	16·00	18·11	31·41
Lushai Hills	...	...	41·09	30·15	41·14	31·87
Garo Hills	...	...	23·64	22·60	23·01	20·53
Sadiya Frontier Tract	...	...	12·14	9·48	12·82	11·73

Cholera was responsible for 3 deaths in the Khasi and Jaintia Hills district. They were reported from the Shillong police station in the month of March, the disease being imported from the plains. The birth and death rates of the Shillong Municipality were 32·78 and 12·79, respectively, which show that the condition of public health of the town was satisfactory during the year. Seventeen cases of typhoid were reported during the summer, the disease being less prevalent than in 1922. A staff for the control of the milk supply imported from villages in the neighbourhood which were suspected of harbouring typhoid fever in endemic form was entertained as in the previous year. A systematic search of all potential breeding grounds for anopheles larvæ within the Shillong Municipality was made by a trained insect collector sanctioned by the Municipality for the purpose. His daily catch was identified in the Public Health Laboratory, the accuracy of his observations being checked by Lieutenant-Colonel T. C. McCombie Young, I.M.S. A year's observation having been completed, the results of these with the recommendations arising from them were submitted by him. The ratios of the Naga Hills district do not represent the condition of public health in the whole district, but only of Kohima town and Dimapur, whose combined population is 4,936 only. There was less prevalence of malaria in the district as compared with the previous year. In the Lushai Hills district respiratory diseases were responsible for the largest number of deaths followed by fevers. Sporadic cases of influenza were occasionally reported from this district and prompt medical aid was afforded to deal with them. The diseases that were most prevalent in the district of the Garo Hills were malaria and *kala-azar*. There is also leprosy and other skin diseases. The Deputy Commissioner remarks that he has "found leprosy and *kala-azar* to be rare in the interior and common near plains bazars." In the Sadiya Frontier Tract, vital statistics are recorded in the towns and Assamese villages only, but as the population of these areas is not available, ratios which have been calculated on the total population do not represent the actual health condition of the year. Goitre, of which 2,127 cases were reported, is prevalent amongst the hill people in this area. These cases received treatment in the dispensaries.

### Registration in tea gardens.

11. The subjoined statement shows the birth and death rates reported from tea estates during the year 1923 :—

Districts.						Birth-rate.	Death-rate.
1						2	3
Cachar	...	...	...	...	...	26·65	21·40
Sylhet	...	...	...	...	...	25·89	20·24
Goalpara	...	...	...	...	...	40·57	21·07
Kamrup	...	...	...	...	...	5·41	7·58
Darrang	...	...	...	...	...	28·90	19·65
Nowgong	...	...	...	...	...	23·37	23·83
Sibsagar	...	...	...	...	...	30·77	22·20
Lakhimpur	...	...	...	...	...	30·83	24·79
Total						28·69	21·97



There was a natural increase of 6·72 per thousand of population in tea estates, which is satisfactory. All districts contributed to the increase except Kamrup, in which reporting is defective. In Nowgong the birth and death rates were almost equal. The Civil Surgeon, Kamrup, reports that out of 27 gardens in his district the monthly return of births and deaths of ten gardens only was received by him. The Deputy Commissioner has been requested to take steps to ensure regular submission of monthly returns by managers through him or the Subdivisional Officer, as the case may be, as laid down in Government letter No. 1459-60M., dated the 7th March 1917.

One hundred and forty deaths from *kala-azar* were reported from tea estates during the year, Nowgong reporting the largest number, *viz.*, 85. A severe outbreak of *kala-azar* occurred on some of the European companies' gardens in the Darrang district and the Superintendent and the Medical Officer of the gardens dealt promptly with it.

12. The total number of births and deaths recorded within railway limits in the year 1923 were 91 and 354, respectively, as compared with 90 and 306 in the preceding year. As in the year 1922, the highest number of deaths were recorded under "other causes" and "respiratory diseases."

13. In the province as a whole, the birth-rates were the highest in the months of November and December and the lowest in the month of June, as usual. In the absence of any wide-spread epidemics the mortality was evenly distributed through the different months of the year, the highest rate of 2·37 per mille being recorded in December and the lowest rate of 1·67 in February.

14. The total infant mortality per thousand of births registered during 1923 was 179·50, as compared with 198·20 in 1922. The following statement compares the rates for Assam with those of other provinces in India:—

Province.							Rate.
1							2
Assam	...	...	...	...	...	...	179·50
Bengal	...	...	...	...	...	...	182·1
Bihar and Orissa	...	...	...	...	...	...	146·52
Central Provinces	...	...	...	...	...	...	220·29
Madras	...	...	...	...	...	...	173·7
Burma	...	...	...	...	...	...	182·38
Bombay	...	...	...	...	...	...	159·75
United Provinces	...	...	...	...	...	...	169·37
Punjab	...	...	...	...	...	...	196·62
North-West Frontier Province	...	...	...	...	...	...	149·50

As usual, the rate of mortality was the highest in the first year of life and lowest in the age group 10 to 15 and the total combined mortality amongst males was higher than that amongst females in the ratio of 115 to 100. The mortality rates amongst the different classes of the community were as follows:—

Christians	...	...	...	...	...	13·81
Hindus	...	...	...	...	...	22·52
Muhammadans	...	...	...	...	...	23·41
Buddhists	...	...	...	...	...	17·48
Other classes	...	...	...	...	...	32·20

15. Members of the vaccination inspecting staff checked 54,124 entries of births and deaths in 3,605 villages and found 3,438 omissions as compared with 46,494, 3,751 and 2,953 in 1922, the percentage of omissions to the number verified in the year under report being 6·35. The percentage of omissions detected in the Kamrup district, *viz.*, 22·00, was the highest and that detected in Nowgong, *viz.*, ·58, was the lowest, as in the preceding year.

16. The agency for the collection of vital statistics both in urban and rural areas remains unchanged. The experiment under which four rewards of Rs. 20 each are granted to four selected gaon-buras in each subdivision of the districts of Kamrup, Darrang, Nowgong, Sibsagar and Lakhimpur for improving the reporting of vital statistics in rural areas was continued during the year and a sum of Rs. 800 was placed at the disposal of the Deputy Commissioners concerned for the purpose.

## SECTION VI.

### HISTORY OF CHIEF DISEASES.

17. The following table shows the death-rate per 1,000 from each of the chief causes of mortality during the year 1923, as compared with the average of the preceding decennium :—

Diseases.	1913-22.			1923.		
	Urban.	Rural.	Combined.	Urban.	Rural.	Combined.
1	2	3	4	5	6	7
Cholera ...	1.56	2.29	2.28	.26	.55	.54
Small-pox ...	.43	.40	.40	.18	.47	.47
Plague ...	...	...	...	...	...	...
Fevers ...	6.84	16.25	16.05	8.00	15.68	15.52
Dysentery and diarrhœa ...	3.11	2.00	2.02	3.72	1.27	1.33
Respiratory diseases ...	3.16	2.19	2.21	3.00	.95	.99
Injuries ...	.48	.29	.29	.54	.27	.28
All other causes ...	6.78	5.34	5.37	7.64	4.33	4.40
Total ...	22.38	28.78	28.64	23.36	23.54	23.54

The death-rate for the year was less than the average of the last ten years by 5.1, and there was a reduction in the incidence of epidemic diseases of cholera, dysentery and diarrhœa, and respiratory diseases, especially in rural areas.

### INFLUENZA.

The total number of deaths recorded under influenza during the year 1923 was 554, as compared with 1,597 in 1922 and no acute epidemic of the disease was reported from any district.

### 18.—CHOLERA.

District.	Death-rate per mille.	
	1913-22.	1923.
1	2	3
Cachar ...	2.21	.38
Sylhet ...	2.47	.69
Goalpara ...	1.74	.54
Kamrup ...	3.43	1.00
Darrang ...	3.02	.38
Nowgong ...	2.70	.17
Sibsagar ...	1.61	.29
Lakhimpur ...	.69	.19
Total ...	2.28	.54



In 1923, cholera contributed 3,728 deaths, giving a ratio of .54 per mille of the population, as against 16,219 and 2.36 in 1922, the mean for the previous ten years being 2.28. The fall in the death-rate was shared by all districts. During the year under report a set of rules were framed and brought into use for regulating the system of reporting outbreaks of epidemic diseases. It appears that earlier information is now available than was possible under former condition, with the result that a commencing epidemic is brought under immediate control.

19. Gauripur Union and Goalpara Municipality reported the highest death-rates from cholera of 2.78 and 1.12, respectively, and this may be ascribed to defective water-supply and conservancy in these towns. Fourteen towns were free from the disease. As regards rural areas Lakhai (3.47), Ajmiriganj (3.04) and Habiganj (2.88) circles in the Sylhet district and Polasbari (3.37), Gauhati (2.80) and Hajo (2.19) in Kamrup reported what may be considered high rates when we take into consideration the low provincial average of .55 for the rural areas. In these two districts there was no epidemic and the cases were probably sporadic. Seventeen rural circles were free from the disease.

20. A total of 564 deaths from cholera were reported from tea estates which yield a ratio of .61 per mille of population, the corresponding figure for the preceding year being 1,123 and 1.21, respectively. The highest ratio of 3.16 was reported from Goalpara district and the lowest of .41 from Nowgong, excluding Kamrup in which reporting is defective. In other districts the ratios were below 1.0 per mille, which was in accordance with its incidence among general population.

## 21.—SMALL-POX.

Districts.							Death-rate per mille.	
							1913-22.	1923.
1							2	3
Cachar	...	...	...	...	...	...	.32	.008
Sylhet	...	...	...	...	...	...	.24	.006
Goalpara	...	...	...	...	...	...	.56	.39
Kamrup	...	...	...	...	...	...	.94	1.49
Darrang	...	...	...	...	...	...	.51	.27
Nowgong	...	...	...	...	...	...	.37	3.88
Sibsagar	...	...	...	...	...	...	.48	.05
Lakhimpur	...	...	...	...	...	...	.08	.04
Total							.40	.47

The recorded mortality from small-pox was the highest in the district of Nowgong. The Civil Surgeon reports that the mortality from small-pox in his district has been increasing since 1921 and that the disease prevailed throughout the year under report in sporadic form, assuming an epidemic type at times. Two special vaccinators were appointed by the Local Board, who, with the permanent vaccinator, operated throughout the year in affected areas. A proposal for making vaccination compulsory in selected rural areas of this district was not approved by Government as the Act is not working satisfactorily in the areas under certain village authorities to which it has been extended. In Kamrup, the disease was reported from several rural circles and steps were at once taken to vaccinate and revaccinate the people of the affected areas. Where opposition was raised, the help of the Deputy Commissioner was sought with the result that some of the people who opposed vaccination were subsequently vaccinated. In the absence of compulsory vaccination, all possible measures were taken



to combat the disease. The Civil Surgeon suggests that vaccination should be made compulsory in rural areas for dealing effectively with the outbreak. In this connection the Deputy Commissioner remarks "I have never been able to make up my mind whether a Deputy Commissioner ought to use his influence (in fact pressure) on objectors. I word notices carefully but have often thought the Deputy Commissioner puts himself in a false position."

22. Gauhati and Nowgong towns reported the highest rates of 1.15 and 1.01, respectively. It appears that infection in both cases was introduced from rural areas in which it was prevalent in an epidemic form. Nineteen out of twenty-three towns were free from the disease. In rural circles the following circles, namely, Roha circle (5.86), Kaliabor (5.30), Nowgong (4.93), Jagi Road (4.43) and Lumding (3.73) in the Nowgong district and Kamalpur (3.06), Sorbhog (2.89) and Nalbari (2.75) in Kamrup reported the highest ratios.

### 23.—FEVERS.

Districts.						Death-rate per mille.	
						1913-22.	1923.
1						2	3
Cachar	...	...	...	...	...	14.55	11.67
Sylhet	...	...	...	...	...	15.78	15.70
Goalpara	...	...	...	...	...	26.05	25.18
Kamrup	...	...	...	...	...	16.89	17.38
Darrang	...	...	...	...	...	15.80	15.21
Nowgong	...	...	...	...	...	15.76	16.18
Sibsagar	...	...	...	...	...	11.77	10.31
Lakhimpur	...	...	...	...	...	10.79	10.16
Total						16.05	15.52

The mortality from fevers was a little lower than the ratio of 1922 and the decennial average, but it is a little higher than the decennial average for the period ending 1917 (pre-influenzal period) for which the ratio was 14.91. The ratios were high in the districts of Sylhet, Goalpara, Kamrup, Darrang and Nowgong, in which *kala-azar* is highly prevalent, and they are lower in other districts in which *kala-azar* is less prevalent.

Special anti-malarial measures were carried out during the year at Pasighat, Lumding and Haflong. The Assistant Political Officer, Pasighat, has supplied the following note on the progress of the operations at Pasighat in 1923 :— "Owing to lack of funds the usual amount of jungle could not be cleared at the beginning of the cold weather of 1922-23. But subsequently some punishment labour was available and was employed to cut the balance. As in the previous year, oil spraying was carried out from April to November inclusive. Early in the year, the bed of the Mora Lalli stream (the principal breeding place of the "Anopheles") was thoroughly cleared out in order to obviate the formation of stagnant pools as far as possible. This work was carried out by the Coolie Corps, which, however, owing to reduction of its numbers will not be available this year. Throughout the rains this stream was sprayed and kept under careful observation.

In comparison with previous years, the results are quite satisfactory. As regards the Charitable Hospital, the number of patients (tribesmen and outsiders) treated for malaria is 115 less than in 1922, which represents a decrease of 8.8 per cent. Amongst the Political Cooly Corps, the incidence is even more marked, the



average percentage for the year under review being 13·9 per cent., as compared with 28 per cent. in 1922. This figure is more reliable than that of the outsiders and hill tribes (a floating population), as in their computation the monthly average strength at Pasighat has been carefully recorded and taken into account. No prophylactic quinine was issued during 1923.

With regard to the Assam Rifles, the total number treated for malaria, both male and female, is 320, as compared with 324 during the previous year. This does not show much improvement, and may be explained by the fact that the garrison was relieved during the year by fresh men from Sadiya, several of whom were already infected. The average monthly strength (sepoys) at Pasighat during 1923 was 123, so that the figure 231 represents an average percentage of 15·4, which is most satisfactory when one remembers the conditions which prevailed a comparatively short time ago.

On the whole, the results obtained this year have fully repaid us and amply justified the small expenditure incurred. Provided the operations are allowed to continue, it is to be hoped that the health of the station will steadily improve and in the not too distant future compare favourably with that of any other."

The Chief Medical Officer of the Assam-Bengal Railway reports that during the year, owing to several changes in the post of the Medical Officer, Lumding, due to leave, other exigencies and the prevailing policy of retrenchment, practically no new work was undertaken. Work on the filling in and the draining of the only remaining *bheel* was in progress. The Haru Langpher stream continues to be the main source of carrier species of mosquitoes. The number of cases of malaria treated at Lumding Hospital in 1923 was 2,862, as compared with 2,263 in 1922. As regards Haflong, the anti-malarial work was confined to ordinary routine measures and some permanent improvement work which was to be undertaken in the cold weather had to be postponed owing to unforeseen changes in the staff.

24. In the urban areas the average death-rate from fevers was 8·00 per mille. The highest rates were Nazira (16·71), Goalpara (14·32), Gauripur (12·76), and Dhubri (12·67). The ratio for Goalpara is composed of malaria (2·41), *kala-azar* (3·21) and other fevers (8·69) and that for Dhubri of malaria (7·60), relapsing fever (·14), *kala-azar* (2·98) and other fevers (1·93). As regards rural circles, 18 circles in Sylhet, 13 in Goalpara, 7 in Kamrup, 6 in Darrang, 3 each in Cachar, Nowgong and Lakhimpur and 2 in Sibsagar returned ratios over the provincial rural average.

## 25. —KALA-AZAR.

*The number of deaths from kala-azar.*

Districts.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.
1	2	3	4	5	6	7	8	9	10	11
Cachar ...	...	2	...	1	4	3	5	1	...	4
Sylhet ...	203	159	63	31	34	7	26	183	275	841
Goalpara ...	138	55	106	153	313	311	602	557	253	442
Kamrup ...	215	283	277	287	564	423	931	755	450	976
Darrang ...	317	310	320	245	263	171	256	169	202	289
Nowgong ...	393	419	451	591	565	559	846	1,172	933	1,291
Sibsagar ...	24	7	28	181	235	168	114	121	128	219
Lakhimpur ...	8	...	3	1	3	5	...	3	4	13
Garo Hills ...	10	12	6	18	22	20	18	26	47	54
Sadiya Frontier Tract...	...	...	...	...	...	...	...	...	...	2
Total ...	1,308	1,247	1,254	1,508	2,003	1,667	2,798	2,987	2,292	4,131



*The number of Kala-azar cases treated.*

Districts.	1918.	1919.	1920.	1921.	1922.	1923.
1	2	3	4	5	6	7
Cachar ...	Treatment on a small scale and no figures are available.		75	316	210	332
Sylhet ...			158	2,837	5,148	9,278
Goalpara ...			1,597	2,500	2,731	4,176
Kamrup ...			2,402	3,491	2,700	4,098
Darrang ...			378	1,360	1,229	2,416
Nowgong ...			1,816	4,343	5,934	11,847
Sibsagar ...			659	875	1,307	2,143
Lakhimpur ...			9	22	12	68
Garó Hills ...			43	84	329	589
Khasi and Jaintia Hills ...			54	52	59	120
Naga Hills ...			...	...	...	4
Total ...			7,188	15,880	19,659	35,071

The recorded deaths from *kala-azar* in 1923 were 1,839 more than that recorded in 1922 and higher than in any year since 1905. It is noticeable that the increase has been shared by all districts without exception. In keeping with the increased mortality the number of cases of *kala-azar* treated in the special dispensaries run by the Public Health Department and in the Medical Department and Local Board dispensaries considerably increased (*vide* statement above). The percentage of deaths to the number of cases treated in 1920 was 38·8 per cent., whereas in 1923 the rate was only 11·7 per cent. This is a very remarkable improvement on the conditions which prevailed in 1920 and before.

During the year, the campaign against *kala-azar* has been greatly strengthened by a much closer co-operation between the Public Health and Medical Departments. This has been effected by constituting a Health Board, of which the Inspector General of Civil Hospitals is President and the Director of Public Health Secretary. Under the present arrangements all Civil Surgeons are responsible for the operations in their respective districts. All Subdivisional Medical Officers are directly responsible to their Civil Surgeons for the operations in their respective subdivisions and all Sub-Assistant Surgeons and Local Board doctors are responsible for the operations in the neighbourhood of their respective dispensaries. Sub-Assistant Surgeons and Local Board doctors survey villages within a five-mile radius of their dispensaries. As a result of these surveys, a much greater prevalence of the disease has been discovered than was formerly believed and every endeavour is being made to bring in sufferers to the nearest centre at once for treatment. In all infected areas, dispensaries are now equipped to treat *kala-azar* cases. Injections are carried out on two days in a week and when necessary dispensaries open sub-centres where injections are given on two more days in the week. Meanwhile surveys are continued. Very careful records of these surveys are kept. The difficulty with regard to treatment is that the whole course covers a lengthy period of about three months and patients are apt to become tired of it, and feeling better discontinue treatment before a complete cure is effected. This is unfortunate because until a patient is completely cured he is dangerous to others. Therefore all persons refusing treatment or discontinuing treatment before a cure has been effected are reported to Magistrates, who take steps to induce the patients to resume. Special regulations enforcing compulsory attendance have been framed to meet these cases. Civil Surgeons generally tour ten days a month in their respective districts, and submit full inspection reports with recommendations to the Public Health Board on the progress of the work. The Inspector General of Civil Hospitals and myself constantly inspect these operations. Six special *kala-azar* Assistant Surgeons are employed in the more heavily infected districts of Sylhet, Goalpara, Kamrup, Nowgong, Darrang and Sibsaagar to assist the Civil Surgeons. They spend the greater part of the month in minutely checking the



reports and registers and seeing that treatment is being carried out at the dispensaries and centres in accordance with departmental orders. In addition to the ordinary Medical Department Sub-Assistant Surgeons and Local Board doctors, 79 special Sub-Assistant Surgeons against 48 in 1922 were employed. The expenditure on these operations for the year 1923-24 amounted to Rs. 2,85,000 approximately.

In Cachar, 737 villages have been surveyed and 117 villages have been reported to be infected. The whole district of Sylhet was surveyed under the supervision of the Assistant Director of Public Health and almost the entire district was found to be infected. To cope with the situation, facilities for treatment were extended and there were in the year five in-door hospitals, 23 outdoor dispensaries and 50 treatment centres in addition to the usual Local Board dispensaries. Besides these, a dispensary has been opened by a private relief fund committee, who intend very shortly to open another. The Civil Surgeon, Goalpara, reports that a large number of fresh infections have been discovered during the year and that the disease is wide-spread in his district. There are 5 in-door hospitals besides outdoor dispensaries in all infected areas. Kamrup showed signs of an increase from the end of the year 1922. It is endemic on the south bank of the Brahmaputra along the two sides of the trunk road. Two mauzas east of the Gauhati town have been found to be infected. In one, three treatment centres have been opened and the other is being surveyed. On the north bank a fresh area of infection was discovered and a dispensary was opened. In Darrang, the Civil Surgeon reports that Bishnath-ghat and surroundings are now definitely known to be infected. Except this area and around Jamaguri and along the road to Dikorai Tea Estate further east no definite focus has been traced. A Sub-Assistant Surgeon has been posted to survey around Gabru area in the Tezpur subdivision. The total number of centres and sub-centres in Nowgong is 26 including two new centres with one additional sub-centre opened during the year. Besides these, special arrangements were made for the treatment of the railway employees of the Assam-Bengal Railway who were suffering from *kala-azar* at the Railway hospital at Lumding. There are also 44 beds for in-door patients. In the Sibsagar district *kala-azar* is prevalent in the Sibsagar and Golaghat subdivisions, the latter being the more affected. All the subdivisions of this district are again being surveyed very closely, and I do not think there can possibly be any doubt but that the infection will be found to be much greater than is at present believed. Majuli, which was hitherto considered free, is now suspected to be infected. The Civil Surgeon has written to the Deputy Commissioner and has asked that gaonburas be held responsible for all *kala-azar* cases in villages being made to attend regularly for treatment just in the same way as they are held responsible for the protection of their villages against small-pox. Since the close of the year the number of beds in both the in-door hospitals at Charingia and Nazira has been reduced.

Three Sub-Assistant Surgeons were on survey duty in the district of Lakhimpur which was hitherto considered to be uninfected, but they have reported 121 suspicious cases. All tea gardens and private companies were inspected by their own European qualified officers and in two of them, *viz.*, Digboi Oil Company and Sessa Tea Estate, 57 and 42 cases of *kala-azar*, respectively, were found. These have been treated and are now cured. Tea-garden Medical Officers reported 90 positive and 314 suspected cases which they found among the tea-garden population. The disease was typical in the sense that only a small percentage showed Leishman Donovan bodies on spleen puncture and the others gave positive Aldehyde tests. Lieutenant-Colonel Young himself inspected Digboi and Sessa. In the Garo Hills, the disease is to be found in all parts of the district, though the northern area seems to be more heavily infected. It is also noticed that the district is more infected in the lower lying water-logged land on its boundaries than in the hilly interior. An unfortunate accident occurred in the spring at Dinadubi dispensary, in which 8 persons died as a result of an injection. The reasons for the accident were fully investigated by the Medical and Executive Officers, and the Sub-Assistant Surgeon and Compounder who were responsible were dismissed from Government service. Four *kala-azar* cases which have been detected in Dimapur in the Naga Hills district were all imported from endemic *kala-azar* areas in other districts. They are under treatment and sanitary precautions have been taken to prevent the spread of the disease. The Civil Surgeon himself surveyed five villages and Dimapur and could not detect any positive case. The areas have been kept under observation. Three positive cases of *kala-azar* were imported into the Sadiya Frontier Tract.



## 26. DYSENTERY AND DIARRHŒA.

Districts.							Death-rate per mille.	
							1913-22.	1923.
1							2	3
Cachar	...	...	...	...	...	...	2·24	1·86
Sylhet	...	...	...	...	...	...	1·94	1·24
Goalpara	...	...	...	...	...	...	·32	·24
Kamrup	...	...	...	...	...	...	·82	·83
Darrang	...	...	...	...	...	...	3·07	1·35
Nowgong	...	...	...	...	...	...	1·21	·77
Sibsagar	...	...	...	...	...	...	3·43	2·15
Lakhimpur	...	...	...	...	...	...	3·72	2·49
Total							2·02	1·33

The death-rate from dysentery and diarrhœa during the year was 1·33, which was lower than the ratio (1·49) of 1922 and 2·02, the decennial average.

The death-rate from dysentery and diarrhœa in tea gardens was 3·87 in 1923, which was ·49 less than that of the preceding year. In Nowgong and Goalpara the rates rose from 3·28 and 3·68 in 1922 to 8·44 and 7·37 in 1923, respectively. In Sibsaagar it fell from 4·99 in 1922 to 3·23 in 1923. In other districts there were only slight variations.

27. *Plague*.—There were no cases of plague reported during the year under report.

28. *Other causes*.—The death-rates in 1923 due to “Respiratory diseases,” “Injuries” and “All other causes” were ·99, ·28 and 4·40, respectively, as compared with 1·22, ·27 and 4·75, respectively, in 1922.

An outbreak of epidemic dropsy, which was confined to two families only, was reported from the Gauhati town. In one family, there were 13 cases with 2 deaths and in the other there were 8 cases with no deaths. It was suspected that Balam rice was responsible for the disease, but no sample of it was available for examination.

## SECTION VII.

## VACCINATION.

(Published separately.)

## SECTION VIII.

## SANITARY WORKS—MILITARY.

(No remarks.)

## SECTION IX.

## SANITARY WORKS—CIVIL.

29. There were sixteen Municipalities and nine Unions in the province in the year under report.

General.

30. The aggregate income including the opening balances of the sixteen municipalities and nine unions amounted to Rs. 10,45,544 in 1922, as compared with Rs. 9,37,869 in the preceding year. The total expenditure on sanitation was Rs. 4,06,595, representing 38·88 per cent. of the total receipts. The percentages of expenditure on sanitation in the various municipalities and unions were as follows:—

Municipal expenditure on sanitation.

1. Tinsukia Union	...	...	...	70·39
2. Jorhat Municipality	...	...	...	54·32
3. Dibrugarh „	...	...	...	53·91
4. Silchar „	...	...	...	52·64
5. Tezpur „	...	...	...	50·45
6. Maulvi Bazar Union	...	...	...	49·60
7. Goalpara Municipality	...	...	...	44·12
8. Shillong „	...	...	...	43·18
9. Sylhet „	...	...	...	42·72
10. Habiganj „	...	...	...	41·88
11. Gauhati „	...	...	...	40·30
12. Karimganj „	...	...	...	33·85
13. Dhubri „	...	...	...	31·61
14. Gauripur Union	...	...	...	30·71
15. Barpeta Municipality	...	...	...	24·04
16. Sibsagar „	...	...	...	22·37
17. Polasbari Union	...	...	...	22·19
18. Sunamganj Municipality	...	...	...	21·77
19. North Lakhimpur Union	...	...	...	20·18
20. Golaghat Municipality	...	...	...	18·06
21. Nowgong „	...	...	...	17·72
22. Doom Dooma Union	...	...	...	17·30
23. Hailakandi „	...	...	...	17·09
24. Mangaldai „	...	...	...	11·99
25. Nazira Union	...	...	...	10·66

The table below shows the expenditure incurred during 1923 as compared with that of 1922 under the different heads:—

Heads of expenditure.	Total expenditure.		Difference.	
	1923.	1922.	Increase.	Decrease.
1	2	3	4	5
	Rs.	Rs.	Rs.	Rs.
1. Conservancy including establishment, road watering, latrines, etc.	2,35,076	2,26,649	8,427	...
2. Drainage ... ..	19,494	21,180	...	1,686
3. Water-supply ... ..	1,24,080	1,03,816	20,264	...
4. Disposal of the dead ... ..	2,013	609	1,404	...
5. Markets and slaughter-houses ... ..	11,132	16,762	...	5,630
6. Vaccination ... ..	3,323	2,907	416	...
7. Other sanitary works ... ..	11,477	10,524	953	...
Total ... ..	4,06,595	3,82,447	31,464	7,316
8. Construction and maintenance of roads ... ..	1,31,060	1,09,322	21,738	...
Total including roads ... ..	5,37,655	4,91,769	53,202	7,316



The increase of Rs. 8,427 under conservancy was contributed by the Shillong and Dibrugarh Municipalities, and Tinsukia and Maulvi Bazar Unions and that of Rs. 20,264 under water-supply mainly by the Shillong Municipality, and also by the Municipalities of Silchar, Tezpur and Jorhat, where piped water-supplies have been provided. In Shillong the management of the piped water-supply was taken over by the municipality from the Public Works Department during the year, and this and the augmentation of the supply accounts for the increase.

31. *Surma Valley Division*.—The monthly bacteriological analyses of the public water-supplies in Silchar and Sylhet towns were performed as usual, and they showed that the quality of the filtered water-supplies was generally excellent. The provisions of a chlorinating plant to protect the water-supply of the Sylhet water-works has been recommended. Mr. Shaw, Executive Engineer, made detailed inspections of these water-works and recorded his inspection notes which were considered by the municipalities. The experiment of removing night soil in the Sylhet Municipality by hand carts in place of animal traction referred to in the report of 1922 was continued. In Silchar, the tank and the shed at the burning ghat have been improved and a pucca drain was constructed. A four-seated public latrine was constructed in the Hailakandi Union. Conservancy arrangements of the Maulvi Bazar Union appear to have received attention as evidenced by the increased expenditure under the head reported.

*Assam Valley Division*.—The water-works at Dhubri, Gauhati, Tezpur and Jorhat Municipalities were maintained in order. Tezpur water-works suffered from several serious break-downs, which necessitated the supply being closed down for considerable periods. These were the result of careless working. Mr. Shaw, Executive Engineer, inspected these water-works and made valuable suggestions for improvements in their working. The Goalpara Municipality filled some borrow pits and constructed a well. Gauhati Municipality spent Rs. 400 on construction of pucca drains, Rs. 860 on the construction of a night soil depôt and Rs. 909 on the drinking water-supply to a sweepers' line by extending pipe lines. Barpeta Municipality raised its municipal bazar and constructed extra quarters for sweepers. In Jorhat, some additional conservancy plant was purchased and Sibsagar improved its municipal market.

## HILL DISTRICTS.

In the Shillong Municipality some drains were constructed, an additional public latrine was built, pipe water-supply was extended to certain wards and arrangements to augment the water-supply of the Municipality are now in progress. The proposed source has been analysed and found excellent. The scheme of water-works at Lungleh has been completed. The water-supply of Pasighat and Tura was improved.

A total expenditure of Rs. 36,657 is reported to have been incurred by the Public Works Department in 1923 on the improvement of water-supply and on minor sanitary works, as compared with Rs. 38,164 expended on similar purposes during the preceding year.

## SECTION X.

### GENERAL REMARKS.

32. *Village sanitation*.—The aggregate expenditure of nineteen Local Boards on the improvement of rural water-supply amounted to Rs. 1,07,243, as compared with Rs. 1,60,640 in 1922. In addition to the usual maintenance charges of tanks and wells the expenditure on original works was as follows:—Dhubri Local Board spent Rs. 11,350 on construction of wells, Goalpara Rs. 3,621 on wells, Barpeta Rs. 1,716 on twelve wells and Rs. 1,274 on four tanks, Gauhati Rs. 4,525 on three tanks and Rs. 2,820 on six wells, Mangaldai Rs. 8,987 on nine tanks and six wells, Tezpur Rs. 8,729 on sixteen wells, Nowgong Rs. 2,132 on four wells, Rs. 1,201 on a new tank, and Rs. 270 on platforms of two wells, Jorhat Rs. 4,116 on tanks, Sibsagar Rs. 5,926 on tanks, Dibrugarh Rs. 3,968 on fifteen wells, North Lakhimpur Rs. 2,518 on ten wells, Hailakandi Rs. 3,417 on tanks and five boards in Sylhet Rs. 12,754 on tanks.



33. The following table shows the quantity of quinine sold through the usual agents in the year 1923 as compared with that in the preceding year :—

Districts.	Treatment parcels sold in		Difference.	
	1923.	1922.	Increase.	Decrease.
1	2	3	4	5
Cachar ... ..	286	696	.....	410
Sylhet ... ..	1,520	3,775	.....	2,255
Goalpara ... ..	573	1,275	.....	702
Kamrup ... ..	591	892	.....	301
Darrang ... ..	387	451	.....	64
Nowgong ... ..	308	460	.....	152
Sibsagar ... ..	181	527	.....	346
Lakhimpur ... ..	130	237	.....	107
Khasi and Jaintia Hills ... ..	210	686	.....	476
Naga Hills ... ..	55	89	.....	34
Lushai Hills ... ..	268	1,313	.....	1,045
Garro Hills ... ..	16	32	.....	16
Manipur ... ..	63	155	.....	92
Sadiya Frontier Tract ... ..	1	15	.....	14
Total ... ..	4,589	10,603	.....	6,014

There was a decrease in all districts, which can be attributed partly to the rise in price of the drug but mainly to the restrictions imposed on its sale, by which it is not now supplied to vendors in places where there is an alternative source of supply. The year under report was also a comparatively healthy one.

34. The only pilgrim fair of any importance which is held within the province is the Sidheswari Mela in the district of Cachar, in which some 8,600 persons assembled, and no outbreak of any epidemic disease was reported. The usual sanitary precautions were taken by the Civil Surgeon.

35. There was only one construction camp for railway coolies during the year under the Assam-Bengal Railway at Raha in the Nowgong district, which accommodated 208 coolies. One four-seated latrine and one *pucca* and three *kutcha* wells were provided. Four sweepers were employed. No construction camps were reported on the Eastern Bengal Railway within the province.

36. The following table shows the work done in the Public Health Laboratory in 1923 as compared with that of the previous year :—

				1923.	1922.
Chemical analysis of water	...	...	...	91	112
Chemical examination of <i>ghee</i>	...	...	...	4	7
Ditto of milk	...	...	...	309	309
Ditto of mustard oil	...	...	...	63	8
Ditto of other food-stuff	...	...	...	1	...
Bacteriological analysis of water	...	...	...	239	256
Bacteriological examination of vaccine lymph	...	...	...	206	237
Examination of mosquitoes	...	...	...	943	99
Miscellaneous	...	...	...	46	15
Total	...	...	...	1,902	1,043



Samples of milk were received from the Shillong Municipality, where the milk supply is controlled as a preventive measure against the introduction of typhoid fever from surrounding villages where the disease is endemic. Out of 309 samples examined, 193 were found to be good and the remainder to be adulterated. Out of four samples of ghee examined two were found to be good and two to be adulterated. Fifty-one samples of mustard oil were on examination found to be good, 5 adulterated and 7 unfit for use. The large increase under examination of mosquitoes is due to a mosquito survey of the Shillong Municipality, for which an insect collector was appointed for a year. The Laboratory continued, during the year, to be used as a Medical Store Depot for the supply of special apparatus for the *kala-azar* campaign.

37. The numbers of immigrants to Assam by the different routes were as

Emigration.

follows :—

<i>Viâ</i> Goalundo by steamer	...	...	...	2,518
<i>Viâ</i> Chandpur by rail to Assam Valley	...	...	...	4,748
<i>Viâ</i> Chandpur by rail to Cachar and Sylhet	...	...	...	5,153
<i>Viâ</i> Naihati and Amingaon by rail, including 6,312 Sirlars	...	...	...	17,058
Total	...	...	...	29,477

In the Goalundo Hospital there were 6 admissions (cholera 1, influenza 4 and measles 1), as compared with 22 in the preceding year.

Amongst the immigrants who used rail route, *viâ*, Naihati, Santahar and Amingaon, there were three deaths in the hospital at Naihati (one from pneumonia, one from small-pox and one from fever). As usual, the Travelling Inspector of Emigrants, who is a Military Assistant Surgeon, inspected the sanitary and feeding arrangements on steamers, railways, debarkation depôts and hospitals and reported them to be satisfactory.

38. Lieutenant-Colonel T. C. McCombie Young, I.M.S., held charge of the department from 1st January to 16th November, when he went on leave, Colonel C. H. Bensley, I.M.S., Inspector General of Civil Hospitals and Prisons, from 17th to 30th November and myself from the 1st December to the end of the year.

In January, Colonel Young inspected vaccination in Kamrup district and inspected Barpeta Municipality. In the same month he attended a meeting of the Assam Branch of the British Medical Association held at Haflong. In February he inspected vaccinations and *kala-azar* operations in the Sylhet district and inspected Baniachong Village Authority. In March he investigated a suspected outbreak of plague in the Darrang district and inspected vaccinations and *kala-azar* in the districts of Nowgong, Kamrup and Sibsagar. He spent April, May and June at headquarters when he prepared the Annual Public Health and Triennial Vaccination reports and made a detailed mosquito survey with reference to prevention of malaria of the Shillong Municipality and submitted a report. He began his rains tour in July when he inspected the Dibrugarh Municipality, and Digboi Oil Factory and Sessa Tea Estate in connection with the prevalence of *kala-azar* there. He was inspecting the *kala-azar* hospital at Nazira when he was recalled from tour under the orders of Government.

I spent December at headquarters.

From January to March Dr. S. R. Rao, Assistant Director of Public Health, was engaged in the detailed *kala-azar* survey of the Sylhet district, when he also inspected Habiganj, Karimganj and Sunamganj Municipalities, Maulvi Bazar Union and Deraï Village Authority. In April, he visited Dibrugarh in connection with the Medical School Examination. He resigned on the 6th August, since when the post has been vacant.

#### GENERAL REMARKS.

(a) *Hygiene Publicity Campaign*.—Since my arrival in the province in December 1923, I have been much struck by the complete absence of any propaganda work in connection with prevention of diseases. This is much to be deplored, as much useful and lasting work can be done by a properly organised Hygiene Publicity Campaign. In order to initiate the campaign as soon as possible, I at once got into communication with the Secretary, Assam Branch of the Red Cross Association. I appealed for funds, which, when placed at my disposal, will enable me completely to



equip six *kala-azar* Assistant Surgeons with a magic lantern each, a complete series of lantern slides on most of the infectious diseases and on maternity and child welfare. They will also be provided with a sufficient amount of literature in Bengali and Assamese on the prevention of these diseases in booklet and leaflet form. These Assistant Surgeons being touring officers are specially suitable for propaganda work of this nature, as they are in an ideal position to give magic lantern lectures in the various villages which they must visit in connection with *kala-azar* work. They can at the same time distribute the literature provided to them for the purpose. The main object of this Hygiene Publicity Campaign will be to promote the spread of knowledge, chiefly among the illiterate, in the fundamental laws of health and to give some idea of the commoner infectious diseases. The lantern lectures will be made as interesting as possible and I feel confident that the masses will not only show interest, but will also acquire knowledge as to how to keep themselves and others healthy with a minimum of trouble and inconvenience to themselves.

(b) *Arrangements for the treatment of purdahnashin ladies suffering from kala-azar.*—It is hoped before long to be able to start such a campaign in large villages only in which it is found, after a survey, that *purdahnashin* ladies in large numbers are suffering from the disease and are not availing themselves of the opportunities at present offered for effecting cures. The disease cannot be eradicated from such villages unless these ladies receive appropriate treatment and are cured. Therefore, to treat only those people who come to dispensaries for the purpose is only meeting the question half-way.

#### OFFICE STAFF.

The work in the office has been carried out in a satisfactory manner. My Head Assistant Babu Chandra Nath Halder has been of the greatest assistance to me. I also highly appreciate the work done by Babu Iswar Chandra Das, who has worked diligently and carefully as Head Clerk in the *kala-azar* section of my office.

T. D. MURISON, *Major, I.M.S.,*

*Offg. Director of Public Health, Assam.*

SHILLONG :

*The 12th May 1924.*

---

#### SECTION XI.

#### ANNUAL REPORT OF THE PUBLIC HEALTH BOARD, ASSAM, FOR THE YEAR 1923.

No meeting of the Public Health Board was held during the year, as there were no schemes under consideration. The Health Board consisting of the Inspector-General of Civil Hospitals as President and the Director of Public Health as Secretary, which has been especially constituted during the year in order to bring the Medical and Public Health Departments into closer co-operation, met almost daily for discussion of important matters relating to *kala-azar* operations and other activities of the Department.

Mr. Shaw, Executive Engineer of the Public Works Department, inspected certain water-works and his recommendations for removal of defects received the attention of local authorities.

T. D. MURISON, *Major, I.M.S.,*

*Secretary, Public Health Board,  
Assam.*

C. H. BENSLEY, *Colonel, I.M.S.,*

*President, Public Health Board,  
Assam.*



---

## STATEMENTS.

---

IMPERIAL STATEMENT No. I.—Statement showing the births

Number.	Districts.				Population according to the Census of 1921.			Number of births registered.		
					Male.	Female.	Total.	Male.	Female.	Total.
1	2				3	4	5	6	7	8
	SURMA VALLEY.									
1	Cachar	...	...	...	261,594	238,890	500,484	8,108	7,791	15,899
2	Sylhet	...	...	...	1,308,734	1,232,607	2,541,341	36,885	34,392	71,277
	Total	...	...	...	1,570,328	1,471,497	3,041,825	44,993	42,183	87,176
	ASSAM VALLEY.									
3	Goalpara	...	...	...	406,628	355,895	762,523	13,074	12,260	25,434
4	Kamrup	...	...	...	397,267	365,404	762,671	11,421	10,819	22,240
5	Darrang	...	...	...	252,849	224,593	477,442	7,342	6,938	14,280
6	Nowgong	...	...	...	208,731	189,276	398,007	4,815	4,415	9,230
7	Sibsagar	...	...	...	433,913	389,284	823,197	11,963	11,004	22,967
8	Lakhimpur	...	...	...	312,843	273,734	586,577	8,253	7,938	16,191
	Total	...	...	...	2,012,231	1,798,186	3,810,417	56,868	53,474	110,342
	Total for the Province	...	...	...	3,582,559	3,269,683	6,852,242	101,861	95,657	197,518

IMPERIAL STATEMENT No. II.—Statement showing the births and deaths

Number	Districts.	Area, in square miles.	Average population per square mile.	Population (Census of 1921).			Births.		Number of deaths registered.		
				Male.	Female.	Total.	Total number.	Births per 1,000 of population.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11	12
	SURMA VALLEY.										
1	Cachar ...	1,859	269	261,594	238,890	500,484	15,899	31.76	5,754	5,458	11,212
2	Sylhet ...	5,388	472	1,308,734	1,232,607	2,541,341	71,277	28.04	33,729	28,774	62,503
	Total ...	7,247	419	1,570,328	1,471,497	3,041,825	87,176	28.65	39,483	34,232	73,715
	ASSAM VALLEY.										
3	Goalpara ...	3,954	193	406,628	355,895	762,523	25,434	33.35	11,731	9,303	21,034
4	Kamrup ...	3,863	197	397,267	365,404	762,671	22,240	29.16	9,760	8,479	18,239
5	Darrang ...	2,916	164	252,849	224,593	477,442	14,280	29.91	5,874	5,435	11,309
6	Nowgong ...	3,699	108	208,731	189,276	398,007	9,230	23.19	5,154	4,419	9,573
7	Sibsagar ...	5,097	162	433,913	389,284	823,197	22,967	27.89	7,824	7,243	15,067
8	Lakhimpur ...	3,910	143	312,843	273,734	586,577	16,191	27.60	6,466	5,929	12,395
	Total ...	23,439	162	2,012,231	1,798,186	3,810,417	110,342	28.96	46,809	40,808	87,617
	Total for the Province	30,686	223	3,582,559	3,269,683	6,852,242	197,518	28.82	86,292	75,040	161,332



registered in the districts of Assam during the year 1923.

Ratio of births per 1,000 of population.			Number of males born to every 100 females born.	Excess of births over deaths per 1,000 of population.	Excess of deaths over births per 1,000 of population.	Mean ratio of births per 1,000 during previous five years.		
Male.	Female.	Total.				Male.	Female.	Total.
9	10	11	12	13	14	15	16	17
16.20	15.56	31.76	104	9.36	...	15.76	14.87	30.63
14.51	13.53	28.04	107	3.45	...	15.58	14.52	30.11
14.79	13.86	28.65	106	4.42	...	15.61	14.58	30.19
17.14	16.21	33.35	106	5.77	...	16.87	15.98	32.85
14.97	14.18	29.16	106	5.25	...	14.80	13.53	28.33
15.37	14.53	29.91	106	6.22	...	14.47	14.03	28.50
12.09	11.09	23.19	109	...	.86	13.01	12.36	25.37
14.53	13.36	27.89	108	9.57	...	12.90	11.99	24.89
14.06	13.53	27.60	104	6.47	...	12.36	11.99	24.35
14.92	14.03	28.96	106	5.97	...	14.20	13.39	27.59
14.86	13.96	28.82	106	5.28	...	14.82	13.92	28.75

registered in the districts of Assam during the year 1923.

Number of deaths of males to every 100 deaths of females.	Deaths per 1,000 of population from—											Mean ratio of deaths per 1,000 during the previous five years.		
	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and Diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	All causes.			Male.	Female.	Total.
									Male.	Female.	Total.			
13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
105	.38	.008	...	11.67	1.86	1.98	.29	6.19	21.99	22.85	22.40	35.00	35.97	35.46
117	.69	.006	...	15.70	1.24	.63	.31	6.00	25.77	23.34	24.59	35.90	33.22	34.60
115	.63	.007	...	15.03	1.34	.85	.31	6.03	25.14	23.26	24.23	35.75	33.67	34.74
126	.54	.39	...	25.18	.24	.21	.26	.73	28.85	26.14	27.58	35.22	32.02	33.73
115	1.00	1.49	...	17.38	.83	.40	.27	2.52	24.56	23.20	23.91	29.67	28.62	29.17
108	.38	.27	...	15.21	1.35	1.58	.32	4.56	23.23	24.19	23.69	24.88	37.40	36.06
116	.17	3.88	...	16.13	.77	.46	.17	2.46	24.69	23.34	24.05	28.72	28.47	28.60
108	.29	.05	...	10.31	2.15	1.46	.21	3.81	18.03	18.60	18.32	28.23	29.59	28.87
109	.19	.04	...	10.16	2.49	2.74	.29	5.18	20.67	21.66	21.13	31.02	32.20	31.57
114	.46	.83	...	15.90	1.31	1.11	.25	3.10	23.26	22.69	22.99	31.25	31.13	31.19
115	.54	.47	...	15.52	1.33	.99	.28	4.40	24.08	22.95	23.54	33.22	32.27	32.77

## IMPERIAL STATEMENT No. III.—Deaths registered in the

No.	Districts.				January.	February.	March.	April.	May.
1	2				3	4	5	6	7
	SURMA VALLEY.								
1	Cachar	...	...	...	1,125	856	833	857	1,002
2	Sylhet	...	...	...	7,260	5,030	4,635	4,573	4,268
	Total	...	...	...	8,385	5,886	5,468	5,430	5,270
	ASSAM VALLEY.								
3	Goalpara	...	...	...	2,150	1,546	1,644	1,730	1,797
4	Kamrup	...	...	...	1,299	978	1,368	1,406	2,107
5	Darrang	...	...	...	803	743	648	847	980
6	Nowgong	...	...	...	872	576	917	728	968
7	Sibsagar	...	...	...	1,211	1,013	973	1,047	1,315
8	Lakhimpur	...	...	...	801	716	807	875	972
	Total	...	...	...	7,136	5,572	6,357	6,633	8,139
	Total for the Province	...	...	...	15,521	11,458	11,825	12,063	13,409
	Ratio per 1,000	...	...	...	2.26	1.67	1.72	1.76	1.95

## IMPERIAL STATEMENT No. IV.—Deaths registered according to

Under 1 year.

1 and under 5.

No.	Districts.	Not exceeding 1 month.			Over 1 month and not exceeding 6 months.			Over 6 months and not exceeding 12 months.			Total of male columns 3, 6 and 9.	Total of female columns 4, 7 and 10.	Total.	Male.	Female.
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	SURMA VALLEY.														
1	Cachar ...	830	643	1,473	376	318	694	183	138	321	1,389	1,099	2,488	686	667
2	Sylhet ...	4,992	3,982	8,974	1,705	1,355	3,060	848	719	1,567	7,545	6,056	13,601	3,638	3,347
	Total	5,822	4,625	10,447	2,081	1,673	3,754	1,031	857	1,888	8,934	7,155	16,089	4,324	4,014
	ASSAM VALLEY.														
3	Goalpara	1,521	1,146	2,667	1,138	952	2,090	352	300	652	3,011	2,398	5,409	1,617	1,395
4	Kamrup	1,146	1,006	2,152	638	594	1,232	407	406	813	2,191	2,006	4,197	1,735	1,725
5	Darrang	594	450	1,044	555	526	1,081	244	262	506	1,393	1,238	2,631	808	823
6	Nowgong	501	368	869	478	393	871	197	205	402	1,176	966	2,142	896	829
7	Sibsagar	695	597	1,292	527	450	977	286	265	551	1,508	1,312	2,820	1,134	1,042
8	Lakhimpur	503	410	913	376	361	737	275	243	518	1,154	1,014	2,163	907	1,008
	Total	4,960	3,977	8,937	3,712	3,276	6,988	1,761	1,681	3,442	10,433	8,934	19,367	7,097	6,822
	Total for the Province.	10,782	8,602	19,384	5,793	4,949	10,742	2,792	2,538	5,330	19,367	16,089	35,456	11,421	10,836
	Population (according to the census of 1921).	...	...	...	...	...	...	...	...	...	101,342	99,389	200,731	359,087	376,501
	Ratio per 1,000	...	...	...	...	...	...	...	...	...	191.10	161.88	176.63	31.80	28.78



*districts of Assam during each month of the year 1923.*

June.	July.	August.	September.	October.	November.	December.	Total.
8	9	10	11	12	13	14	15
955	1,028	829	805	937	936	1,049	11,212
4,187	4,903	4,373	4,681	5,395	5,889	7,309	62,503
5,142	5,931	5,202	5,486	6,332	6,825	8,358	73,715
1,670	1,681	1,428	1,451	1,798	1,855	2,284	21,034
2,336	1,502	1,343	1,370	1,269	1,711	1,545	18,239
897	1,217	1,347	852	790	1,062	1,123	11,309
1,010	1,026	907	629	661	652	627	9,573
1,452	1,518	1,388	1,178	1,528	1,194	1,250	15,067
1,194	1,200	1,107	1,221	1,176	1,260	1,066	12,395
8,559	8,144	7,525	6,701	7,222	7,734	7,895	87,617
13,701	14,075	12,727	12,187	13,554	14,559	16,253	161,332
1.99	2.05	1.85	1.78	1.98	2.12	2.37	23.54

*age in the districts of Assam during the year 1923.*

5 and under 10.		10 and under 15.		15 and under 20.		20 and under 30.		30 and under 40.		40 and under 50.		50 and under 60.		60 and upwards.	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
390	343	220	176	183	302	495	864	632	628	488	383	459	279	812	717
2,439	1,711	1,471	949	1,401	1,786	3,462	4,458	3,795	3,078	3,237	1,984	2,621	1,663	4,120	3,742
2,829	2,054	1,691	1,125	1,584	2,028	3,957	5,322	4,427	3,706	3,725	2,367	3,080	1,942	4,932	4,459
945	748	555	431	452	526	994	1,095	1,219	841	974	555	800	496	1,164	818
1,043	877	509	333	373	357	738	879	847	661	780	555	708	475	836	611
395	345	252	151	195	260	482	773	667	703	669	397	522	364	491	381
518	432	274	248	229	243	452	543	531	416	385	271	344	209	349	262
553	505	317	305	299	379	641	1,106	934	971	852	595	810	519	776	509
496	498	291	244	204	262	593	769	848	861	809	497	612	357	552	419
3,950	3,405	2,198	1,712	1,752	2,027	3,900	5,165	5,046	4,453	4,469	2,870	3,796	2,420	4,168	3,000
6,779	5,459	3,889	2,837	3,336	4,115	7,857	10,487	9,473	8,159	8,194	5,237	6,876	4,362	9,100	7,459
580,966	568,880	433,305	342,744	278,664	292,075	577,151	613,934	556,071	448,620	359,844	259,435	198,849	149,979	137,280	118,126
11.67	9.59	8.97	8.27	11.87	14.09	13.61	17.08	17.03	18.18	22.77	20.19	34.58	29.08	66.29	63.15

## IMPERIAL STATEMENT No. V.—Deaths registered according

Number.	Districts.	Population according								
		Christians.			Hindus.			Muhammadans.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	848	762	1,610	166,782	152,463	319,245	89,513	81,109	170,622
2	Sylhet...	970	786	1,756	565,443	534,302	1,099,745	738,916	694,474	1,433,390
	Total ...	1,818	1,548	3,366	732,225	686,765	1,418,990	828,429	775,583	1,604,012
	ASSAM VALLEY.									
3	Goalpara ...	5,434	4,878	10,312	198,904	170,488	369,392	167,765	148,725	316,490
4	Kamrup ...	1,926	1,735	3,661	283,554	261,085	544,639	59,986	51,560	111,546
5	Darrang ...	2,816	2,502	5,318	179,272	158,457	337,729	20,137	16,398	36,535
6	Nowgong ...	1,465	1,460	2,925	116,864	105,235	222,099	38,655	31,927	70,582
7	Sibsagar ...	4,557	3,823	8,380	365,885	329,131	695,016	19,370	15,624	34,994
8	Lakhimpur ...	4,216	3,515	7,731	244,852	214,283	459,135	9,485	5,961	15,446
	Total ...	20,414	17,913	38,327	1,389,331	1,238,679	2,628,010	315,398	270,195	585,593
	Total for the Province ...	22,232	19,461	41,693	2,121,556	1,925,444	4,047,000	1,143,827	1,045,778	2,189,605

## IMPERIAL STATEMENT No. V.—Deaths registered according

Number.	Districts.	Number of deaths registered—concl'd.								
		Buddhists.			Other classes.			Total.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
		30	31	32	33	34	35	36	37	38
	SURMA VALLEY.									
1	Cachar ...	...	...	...	290	284	574	5,754	5,458	11,212
2	Sylhet...	...	...	...	362	276	638	33,729	28,774	62,503
	Total ...	...	...	...	652	560	1,212	39,483	34,232	73,715
	ASSAM VALLEY.									
3	Goalpara ...	10	14	24	2,209	1,465	3,674	11,731	9,303	21,034
4	Kamrup ...	...	2	2	1,478	1,199	2,677	9,760	8,479	18,239
5	Darrang ...	3	1	4	1,728	1,615	3,343	5,874	5,435	11,309
6	Nowgong ...	...	...	...	1,563	1,319	2,882	5,154	4,419	9,573
7	Sibsagar ...	35	21	56	1,085	950	2,035	7,824	7,243	15,067
8	Lakhimpur ...	43	32	75	1,205	1,160	2,365	6,466	5,929	12,395
	Total...	91	70	161	9,268	7,708	16,976	46,809	40,808	87,617
	Total for the Province	91	70	161	9,920	8,268	18,188	86,292	75,040	161,332



to class in the districts of Assam during the year 1923.

to the Census of 1921.									Number of deaths registered.								
Buddhists.			Other classes.			Total.			Christians.			Hindus.			Muhammadans.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
33	2	35	4,418	4,554	8,972	261,594	238,890	500,484	4	9	13	3,442	3,293	6,735	2,018	1,872	3,890
34	9	43	3,371	3,036	6,407	1,308,734	1,232,607	2,541,341	5	5	10	14,521	12,256	26,777	18,841	16,237	35,078
67	11	78	7,789	7,590	15,379	1,570,328	1,471,497	3,041,825	9	14	23	17,963	15,549	33,512	20,859	18,109	38,968
547	375	922	33,978	31,429	65,407	406,628	355,895	762,523	74	89	163	5,103	4,305	9,408	4,335	3,430	7,765
286	113	399	51,515	50,911	102,426	397,267	365,404	762,671	28	15	43	7,138	6,305	13,443	1,116	958	2,074
466	244	710	50,158	46,992	97,150	252,849	224,593	477,442	40	41	81	3,717	3,405	7,122	386	373	759
24	6	30	51,723	50,648	102,371	208,731	189,276	398,007	37	43	80	3,033	2,624	5,657	521	433	954
1,389	1,055	2,444	42,712	39,651	82,363	433,913	389,284	823,197	59	51	110	6,397	6,012	12,409	248	209	457
2,516	2,110	4,626	51,774	47,865	99,639	312,843	273,734	586,577	33	43	76	5,020	4,579	9,599	165	115	280
5,228	3,903	9,131	281,860	267,496	549,356	2,012,231	1,798,186	3,810,417	271	232	553	30,408	27,230	57,638	6,771	5,518	12,289
5,295	3,914	9,209	289,649	275,086	564,735	3,582,559	3,269,683	6,852,242	280	296	576	48,371	42,779	91,150	27,630	23,627	51,257

to class in the districts of Assam during the year 1923—concl'd.

Ratio of deaths per 1,000 of population.																	
Christians.			Hindus.			Muhammadans.			Buddhists.			Other classes.			Total.		
Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
4·71	11·81	8·07	20·63	21·59	21·09	22·54	23·08	22·79	...	...	...	65·64	62·36	63·97	21·99	22·85	22·40
5·15	6·36	5·69	25·63	22·93	24·34	25·49	23·38	24·47	...	...	...	107·38	90·90	99·57	25·77	23·34	24·59
4·95	9·04	6·83	24·53	22·64	23·61	25·17	23·34	24·29	...	...	...	83·70	73·78	78·80	25·14	23·26	24·23
13·61	18·24	15·80	25·66	25·25	25·47	25·84	23·06	24·53	18·28	37·33	26·03	65·01	46·61	56·17	28·85	26·14	27·58
14·53	8·64	11·74	25·17	24·14	24·68	18·60	18·58	18·59	...	17·69	5·01	28·69	23·55	26·13	24·56	23·20	23·91
14·29	16·38	15·23	20·73	21·49	21·08	19·16	22·74	20·77	6·43	4·09	5·63	34·45	34·36	34·41	23·23	24·19	23·69
25·25	29·45	27·35	25·95	24·93	25·47	13·43	13·56	13·51	...	...	...	30·21	26·04	28·15	24·69	23·34	24·05
12·95	13·34	13·12	17·43	18·26	17·85	12·80	13·18	13·06	25·19	19·90	22·91	25·40	23·96	24·70	18·03	18·60	18·32
7·82	12·23	9·83	20·50	21·37	20·90	17·39	19·29	18·12	17·09	15·16	16·21	23·27	24·23	23·73	20·67	21·66	21·13
13·27	15·74	14·42	21·88	21·93	21·93	21·46	20·42	20·98	17·40	17·93	17·63	32·88	23·81	30·90	23·26	22·69	22·99
12·51	15·21	13·81	22·79	22·21	22·52	24·15	22·59	23·41	17·18	17·88	17·43	34·25	30·05	32·20	24·08	22·95	23·54



## IMPERIAL STATEMENT No. VI.—Deaths registered from different

1	2	3	4			5	6	7	8	9	10	
Number.	Districts and towns.	Population according to Census of 1921.	Births.			Birth-rate.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.
			Male.	Female.	Total.							
DISTRICTS EXCLUDING TOWNS.												
SURMA VALLEY.												
1	Cachar ... ..	488,052	7,972	7,663	15,635	32·03	191	4	...	5,796	907	977
2	Sylhet ... ..	2,505,744	36,390	33,894	70,284	28·04	1,744	17	...	39,667	3,020	1,527
	Total ... ..	2,993,796	44,362	41,557	85,919	28·69	1,935	21	...	45,463	3,927	2,504
ASSAM VALLEY.												
3	Goalpara ... ..	745,293	12,803	12,098	24,901	33·41	396	301	...	18,975	146	116
4	Kamrup ... ..	734,461	10,875	10,349	21,224	28·89	759	1,124	...	12,948	479	181
5	Darrang ... ..	469,078	7,196	6,848	14,044	29·94	182	128	...	7,208	612	710
6	Nowgong ... ..	391,122	4,705	4,322	9,027	23·08	67	1,539	...	6,340	277	161
7	Sibsagar ... ..	804,955	11,623	10,715	22,338	27·75	234	46	...	8,364	1,721	1,166
8	Lakhimpur ... ..	564,362	8,007	7,697	15,704	27·82	116	26	...	5,855	1,392	1,544
	Total ... ..	3,709,271	55,209	52,029	107,238	28·91	1,754	3,164	...	59,690	4,627	3,878
	Total for districts, excluding towns.	6,703,067	99,571	93,586	193,157	28·81	3,689	3,185	...	105,153	8,554	6,382
TOWNS.												
SURMA VALLEY.												
1	Silchar ... ..	10,204	116	111	227	22·25	...	...	...	36	20	16
2	Hailakandi ... ..	2,228	20	17	37	16·60	...	...	...	12	4	...
3	Sylhet ... ..	16,912	244	248	492	29·03	1	...	...	96	62	66
4	Karimganj ... ..	4,552	59	51	110	24·16	...	...	...	7	16	10
5	Maulvi Bazar ... ..	3,334	31	32	63	18·89	1	...	...	25	9	1
6	Habiganj ... ..	5,918	104	100	204	34·47	4	...	...	61	48	6
7	Sunamganj ... ..	4,881	57	67	124	25·40	2	...	...	47	6	...
	Total ... ..	48,029	631	626	1,257	26·17	8	...	...	284	165	99



causes in the districts and towns of the province of Assam during the year 1923.

11						12	13	14											15
Injuries.						All other causes.	Total.	Ratio of deaths per 1,000 of population.											Number.
Suicide.		Wounds or accidents.	Snakes and wild animals.	Rabies.	Total.			Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.			
Male.	Female.															For the year.	Mean of previous five years.		
6	...	120	11	...	137	3,025	11,037	·39	·008	...	11·87	1·85	2·00	·28	6·19	22·61	35·89	1	
30	22	682	49	7	790	14,956	61,721	·69	·006	...	15·83	1·20	·60	·31	5·97	24·63	34·75	2	
36	22	802	60	7	927	17,981	72,758	·64	·007	...	15·18	1·31	·83	·30	6·00	24·30	34·93		
4	5	118	62	4	193	462	20,589	·53	·40	...	25·46	·19	·15	·25	·62	27·62	33·86	3	
31	24	77	52	10	194	1,708	17,393	1·03	1·53	...	17·63	·65	·24	·26	2·32	23·68	29·10	4	
12	10	75	34	17	148	2,071	11,059	·38	·27	...	15·37	1·30	1·51	·31	4·41	23·57	36·39	5	
...	2	28	30	6	66	929	9,379	·17	3·93	...	16·21	·70	·41	·16	2·37	23·98	28·61	6	
24	12	98	18	13	165	2,997	14,693	·29	·05	...	10·39	2·14	1·44	·20	3·72	18·25	29·07	7	
20	6	110	16	7	159	2,883	11,975	·20	·04	...	10·37	2·46	2·73	·28	5·10	21·21	31·77	8	
91	59	506	212	57	925	11,050	85,088	·47	·85	...	16·09	1·24	1·04	·25	2·98	22·94	31·33		
127	81	1,308	272	64	1,852	29,031	157,846	·55	·47	...	15·68	1·27	·95	·27	4·33	23·54	32·94		
...	...	10	...	...	10	55	137	...	...	...	3·52	1·96	1·56	·98	5·39	13·42	18·22	1	
...	...	1	...	...	1	21	38	...	...	...	5·38	1·79	...	·44	9·42	17·05	21·54	2	
...	...	4	...	...	4	154	383	·05	...	...	5·67	3·66	3·90	·23	9·10	22·64	24·24	3	
...	...	2	...	...	2	42	77	...	...	...	1·53	3·51	2·19	·43	9·22	16·91	18·88	4	
...	...	...	...	...	...	7	43	·29	...	...	7·49	2·69	·29	...	2·09	12·89	16·79	5	
...	...	11	...	...	11	58	188	·67	...	...	10·30	8·11	1·01	1·85	9·80	31·76	29·90	6	
...	...	2	...	...	2	34	91	·41	...	...	9·63	1·23	...	·41	6·96	18·64	27·45	7	
...	...	30	...	...	30	371	957	·16	...	...	5·91	3·43	2·06	·62	7·72	19·92	22·84		

IMPERIAL STATEMENT No. VI.—Deaths registered from different causes

1	2	3	4			5	6	7	8	9	10	
Number.	Districts and towns.	Population according to Census of 1921.	Births.			Birth-rate.	Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.
			Male.	Female.	Total.							
8	TOWNS—concl'd. ASSAM VALLEY. Dhubri ... ..	6,707	98	105	203	30·26	...	1	...	85	24	29
9	Goalpara ... ..	6,212	113	111	224	36·05	7	...	...	89	17	17
10	Gauripur ... ..	4,311	60	46	106	24·59	12	...	...	55	2	4
11	Gauhati ... ..	16,480	268	202	470	28·52	8	19	...	189	61	80
12	Barpeta ... ..	11,730	278	268	546	46·54	...	...	...	119	25	45
13	Tezpur ... ..	7,341	130	76	206	28·06	...	1	...	50	30	47
14	Mangaldai ... ..	1,023	16	14	30	29·32	...	...	...	5	4	...
15	Nowgong ... ..	6,885	110	93	203	29·48	2	7	...	80	30	23
16	Jorhat ... ..	6,626	84	73	157	23·69	2	...	...	15	26	25
17	Sibsagar ... ..	5,329	137	92	229	42·97	...	...	...	29	16	9
18	Golaghat ... ..	3,655	53	45	98	26·81	...	...	...	41	12	1
19	Nazira... ..	2,632	66	79	145	55·09	...	...	...	44	1	1
20	Dibrugarh ... ..	16,007	180	172	352	21·99	...	...	...	67	57	58
21	North Lakhimpur ... ..	1,966	28	22	50	25·43	...	...	...	16	2	6
22	Doom Dooma ... ..	1,162	10	10	20	17·21	...	...	...	13	10	3
23	Tinsukia ... ..	3,080	28	37	65	21·10	...	...	...	13	3	1
	Total ... ..	101,146	1,659	1,445	3,104	30·68	31	28	...	910	390	349
	Total for towns ... ..	149,175	2,290	2,071	4,361	29·23	39	28	...	1,194	555	448
	Total for the Province ... ..	6,852,242	101,861	95,657	197,518	28·82	3,728	3,213	...	106,247	9,109	6,830

*Supplementary (optional) Statement*

[illegible]



in the districts and towns of the province of Assam during the year 1923—concluded.

11						12	13	14											15
Injuries.						All other causes.	Total.	Ratio of deaths per 1,000 of population.											Number.
Suicide.		Wounds or accidents.	Snakes and wild animals.	Rabies.	Total.			Cholera.	Small-pox.	Plague.	Fever.	Dysentery and diarrhoea.	Respiratory diseases.	Injuries.	All other causes.	From all causes.			
Male.	Female.															For the year.	Mean of previous five years.		
...	...	2	...	...	2	46	187	...	14	...	12.67	3.58	4.32	.29	6.85	27.88	37.42	8	
...	...	2	...	...	2	33	165	1.12	...	...	14.32	2.73	2.73	.32	5.31	26.56	33.80	9	
...	...	1	1	...	2	18	93	2.78	...	...	12.76	.46	.93	.46	4.17	21.57	14.38	10	
...	...	12	...	...	12	120	489	.48	1.15	...	11.47	3.70	4.85	.72	7.28	29.67	30.88	11	
...	...	5	...	...	5	93	357	...	...	...	10.14	8.09	3.83	.42	7.92	30.43	31.03	12	
...	...	4	1	...	5	102	235	...	.13	...	6.81	4.08	6.40	.68	15.89	32.02	16.75	13	
...	...	...	...	...	...	6	15	...	...	...	4.88	3.89	...	...	5.86	14.66	27.37	14	
...	...	1	...	...	1	51	194	.29	1.01	...	11.62	4.35	3.34	.14	7.40	28.17	28.32	15	
...	...	3	...	...	3	47	118	.30	...	...	2.26	3.92	3.77	.45	7.09	17.81	21.58	16	
...	...	4	1	...	5	66	125	...	...	...	5.44	3.00	1.69	.94	12.38	23.45	16.70	17	
...	...	3	...	...	3	18	75	...	...	...	11.21	3.28	.27	.82	4.92	20.52	25.71	18	
...	...	...	...	...	...	10	56	...	...	...	16.71	.38	.38	...	3.79	21.28	16.33	19	
...	...	10	...	...	10	121	313	...	...	...	4.18	3.56	3.62	.62	7.56	19.55	24.05	20	
...	...	...	...	...	...	17	41	...	...	...	8.13	1.01	3.05	...	8.65	20.85	41.70	21	
...	...	1	...	...	1	8	35	...	...	...	11.19	8.60	2.58	.86	6.88	30.12	30.12	22	
...	...	...	...	...	...	14	31	...	...	...	4.22	.97	.32	...	4.54	10.06	Not available.	23	
...	...	48	3	...	51	770	2,529	.30	.27	...	8.99	3.85	3.45	.50	7.61	25.00	26.64		
...	...	78	3	...	81	1,141	3,486	.26	.18	...	8.00	3.72	3.00	.54	7.64	23.36	25.30		
127	81	1,386	275	64	1,933	30,172	161,332	.54	.47	...	15.52	1.33	.99	.28	4.40	23.54	32.77		

VI(a) for the year 1923.

7		8		9		10		11		12	Deaths under one year.			Infant mortality rate.
Dysentery.		Diarrhœa.		Pneumonia.		Pthisis.		Other respiratory diseases.		Deaths from child-birth.				
Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.	Deaths.	Ratio.		Male.	Female.	Total.	
13	1·27	7	·68	1	·09	5	·49	10	·98	1	12	12	24	105·72
48	2·83	14	·82	19	1·12	4	·23	43	2·54	2	41	34	74	150·40
36	6·08	12	2·02	1	·16	...	...	5	·84	1	28	22	50	245·09
14	3·07	2	·43	1	·22	2	·43	7	1·53	...	9	9	18	163·63
5	1·02	1	·20	...	...	...	...	...	...	1	17	17	34	274·19
49	2·97	12	·72	42	2·54	11	·66	27	1·63	4	36	29	65	138·29
77	6·56	18	1·53	16	1·36	9	·76	20	1·70	8	44	37	81	148·35
16	2·38	8	1·19	14	2·08	3	·44	12	1·78	2	31	10	41	201·97
11	1·77	6	·96	14	2·25	...	...	3	·48	4	22	21	43	191·96
19	2·58	11	1·49	25	3·40	15	2·04	7	·95	8	28	14	42	203·88
30	4·35	...	...	...	...	...	...	23	3·34	1	10	17	27	133·00
12	1·81	14	2·11	9	1·35	2	·30	14	2·11	3	16	12	28	178·34
11	2·06	5	·93	2	·37	...	...	7	1·31	2	21	16	37	161·57
47	2·93	10	·62	15	·93	2	·12	41	2·56	1	14	8	22	62·50
9	·52	3	·17	...	...	...	...	34	1·97	1	37	37	74	131·20

## IMPERIAL STATEMENT No. VII.—Deaths registered from Cholera in the

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from cholera were reported.	Number in each district.	Number from which deaths from cholera were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ... ..	12	8	1,103	33	3	12	23	55	44
2	Sylhet ... ..	40	36	10,781	405	29	142	281	397	218
	Total ... ..	52	44	11,884	438	32	154	304	452	262
	ASSAM VALLEY.									
3	Goalpara ... ..	22	16	2,137	94	...	24	2	9	8
4	Kamrup ... ..	15	13	1,954	96	10	19	48	45	32
5	Darrang ... ..	13	8	1,406	106	6	14	7	22	25
6	Nowgong ... ..	10	8	1,495	19*	1	2	23	5	6
7	Sibsagar ... ..	15	8	2,143	183	2	5	7	22	30
8	Lakhimpur ... ..	15	5	1,702	13	...	1	7	13	14
	Total ... ..	90	58	10,837	511	19	65	94	116	115
	Total for the Province	142	102	22,721	949	51	219	398	568	377

\* Mauzas.

## IMPERIAL STATEMENT No. VIII.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.	June.	July.
		Number in each district.	Number from which deaths from small-pox were reported.	Number in each district.	Number from which deaths from small-pox were reported.							
1	2	3	4	5	6	7	8	9	10	11	12	13
	SURMA VALLEY.											
1	Cachar ... ..	12	1	1,103	2	1	3	...	...	...	...	...
2	Sylhet ... ..	40	6	10,781	7	...	...	1	1	...	3	4
	Total ... ..	52	7	11,884	9	1	3	1	1	...	3	4
	ASSAM VALLEY.											
3	Goalpara ... ..	22	13	2,137	73	31	42	34	37	54	25	22
4	Kamrup ... ..	15	11	1,954	40	98	81	148	196	174	168	77
5	Darrang ... ..	13	10	1,406	44	1	...	1	12	10	4	23
6	Nowgong ... ..	10	10	1,495	42*	203	112	238	181	221	196	168
7	Sibsagar ... ..	15	6	2,143	11	3	2	...	1	6	3	5
8	Lakhimpur ... ..	15	6	1,702	4	3	6	1	5	...	1	...
	Total ... ..	90	56	10,837	214	339	243	422	432	465	397	295
	Total for the Province	142	63	22,721	223	340	246	423	433	465	400	299

\* Mauzas.



*districts of Assam during each month of the year 1923.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
32	8	4	5	2	...	3	126	65	191	·48	·27	·38	2·84	1
82	59	63	27	28	44	382	1,032	720	1,752	·79	·59	·69	2·77	2
114	67	67	32	30	44	385	1,158	785	1,943	·73	·53	·63	2·78	
4	34	8	32	43	102	149	203	212	415	·49	·59	·54	1·47	3
19	46	19	73	68	238	150	446	321	767	1·12	·88	1·00	3·34	4
21	16	22	13	18	14	4	112	70	182	·44	·31	·38	3·47	5
5	1	...	6	10	7	3	40	29	69	·19	·15	·17	1·78	6
55	21	27	19	28	8	12	126	110	236	·29	·28	·29	1·26	7
15	19	12	15	11	9	...	65	51	116	·20	·18	·19	·59	8
119	137	88	158	178	378	318	992	793	1,785	·49	·44	·46	1·94	
233	204	155	190	208	422	703	2,150	1,578	3,728	·60	·48	·54	2·32	

*Small-pox in the districts of Assam during each month of the year 1923.*

August.	September.	October.	November.	December.	Total.			Number of deaths among children.		Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
					Male.	Female.	Total.	Under 1 year.	One to 10 years.	Male.	Female.	Total.		
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
...	...	...	...	...	2	2	4	...	...	·007	·008	·008	·11	1
3	...	1	1	3	9	8	17	6	6	·006	·006	·006	·20	2
3	...	1	1	3	11	10	21	6	6	·006	·007	·007	·19	
25	9	8	1	14	185	117	302	22	136	·45	·33	·39	·49	3
70	32	23	26	50	600	543	1,143	170	430	1·51	1·48	1·49	·55	4
17	4	3	13	41	68	61	129	64	52	·27	·27	·27	·62	5
113	49	22	21	22	820	726	1,546	196	640	3·92	3·83	3·88	·55	6
6	9	7	1	3	26	20	46	...	2	·06	·05	·05	·21	7
2	2	6	...	...	14	12	26	1	4	·04	·04	·04	·07	8
233	105	69	62	130	1,713	1,479	3,192	453	1,264	·85	·82	·83	·42	
236	105	70	63	133	1,724	1,489	3,213	459	1,270	·43	·45	·47	·32	

## IMPERIAL STATEMENT No. IX.—Deaths registered from Fevers

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths from fevers were reported.	Number in each district.	Number from which deaths from fevers were reported.					
1	2				3	4	5	6	7	8	9	10	11
	SURMA VALLEY.												
1	Cachar	...	...	...	12	12	1,103	528	596	431	433	418	572
2	Sylhet	...	...	...	40	40	10,781	10,781	4,615	3,208	2,746	2,797	2,841
	Total	...	...	...	52	52	11,884	11,309	5,211	3,639	3,179	3,215	3,413
	ASSAM VALLEY.												
3	Goalpara	...	...	...	22	22	2,137	2,137	2,045	1,421	1,531	1,611	1,628
4	Kamrup	...	...	...	15	14	1,954	1,001	945	735	915	977	1,666
5	Darrang	...	...	...	13	12	1,406	1,126	471	469	418	528	661
6	Nowgong	...	...	...	10	10	1,495	59*	522	375	533	444	614
7	Sibsagar	...	...	...	15	15	2,143	1,238	655	593	561	596	759
8	Lakhimpur	...	...	...	15	15	1,702	1,283	387	281	333	336	497
	Total	...	...	...	90	88	10,837	6,844	5,025	3,874	4,291	4,492	5,825
	Total for the Province	...	...	...	142	140	22,721	18,153	10,236	7,513	7,470	7,707	9,238

\* Mauzas.

## IMPERIAL STATEMENT No. X.—Deaths registered from

Number.	Districts.				Circles of Registration.		Villages.		January.	February.	March.	April.	May.
					Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.	Number in each district.	Number from which deaths from dysentery and diarrhoea were reported.					
1	2				3	4	5	6	7	8	9	10	11
	SURMA VALLEY.												
1	Cachar	...	...	...	12	11	1,103	194	79	53	85	83	116
2	Sylhet	...	...	...	40	39	10,781	1,474	320	204	216	239	217
	Total	...	...	...	52	50	11,884	1,668	399	257	301	322	333
	ASSAM VALLEY												
3	Goalpara	...	...	...	22	19	2,137	80	12	6	14	12	18
4	Kamrup	...	...	...	15	14	1,954	153	31	24	30	34	95
5	Darrang	...	...	...	13	12	1,406	166	42	33	29	53	67
6	Nowgong	...	...	...	10	10	1,495	37*	21	15	25	19	27
7	Sibsagar	...	...	...	15	14	2,143	496	113	82	92	100	159
8	Lakhimpur	...	...	...	15	14	1,702	103	61	67	59	118	139
	Total	...	...	...	90	83	10,837	1,035	280	227	249	336	505
	Total for the Province...	...	...	...	142	133	22,721	2,703	679	484	550	658	838

\*Mauzas



*in the districts of Assam during each month of the year 1923.*

June.	July	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
567	622	452	375	447	434	497	3,020	2,824	5,844	11.54	11.82	11.67	17.82	1
2,838	3,455	2,972	3,112	3,504	3,540	4,275	21,997	17,906	39,903	16.80	14.53	15.70	19.23	2
3,405	4,077	3,424	3,487	3,951	3,974	4,772	25,017	20,730	45,747	15.93	14.08	15.03	18.99	
1,555	1,552	1,298	1,212	1,634	1,623	1,994	10,735	8,469	19,204	23.40	23.79	25.18	28.98	3
1,822	1,132	973	969	873	1,157	1,092	7,034	6,222	13,256	17.70	17.02	17.38	20.36	4
608	820	868	502	454	699	765	3,819	3,444	7,263	15.10	15.33	15.21	16.47	5
704	702	638	430	481	498	479	3,478	2,942	6,420	16.66	15.54	16.13	19.10	6
846	902	786	600	858	642	695	4,518	3,975	8,493	10.41	10.21	10.31	15.21	7
651	582	569	554	597	658	519	3,120	2,844	5,964	9.97	10.39	10.16	12.44	8
6,186	5,690	5,132	4,367	4,897	5,277	5,544	32,704	27,896	60,600	16.25	15.51	15.90	18.70	
9,591	9,767	8,556	7,854	8,848	9,251	10,316	57,721	48,626	106,347	16.11	14.87	15.52	18.83	

*Dysentery and Diarrhœa in the districts of Assam during each month of the year 1923.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
.80	65	62	74	74	84	76	505	496	931	1.93	1.78	1.86	2.34	1
224	243	242	245	283	381	347	1,759	1,402	3,161	1.34	1.14	1.24	1.71	2
304	308	304	319	357	465	423	2,264	1,828	4,092	1.44	1.24	1.34	1.82	
20	26	17	15	11	16	22	109	80	189	.26	.22	.24	.35	3
97	62	52	61	88	28	33	356	279	635	.89	.76	.83	.83	4
60	75	83	51	56	45	52	350	296	646	1.38	1.31	1.35	2.95	5
36	29	32	37	31	15	20	192	115	307	.92	.60	.77	1.09	6
168	210	182	175	206	164	125	921	655	1,776	2.12	2.19	2.15	3.18	7
167	165	134	158	159	134	103	826	638	1,464	2.64	2.33	2.49	3.80	8
548	567	500	497	551	402	355	2,754	2,263	5,017	1.36	1.25	1.31	1.99	
852	875	804	816	908	867	778	5,018	4,091	9,109	1.40	1.25	1.33	1.91	

## IMPERIAL STATEMENT No. XI.—Deaths registered from

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from respiratory diseases were reported.	Number in each district.	Number from which deaths from respiratory diseases were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	12	10	1,103	108	114	111	96	84	60
2	Sylhet ...	40	36	10,781	647	191	131	182	148	119
	Total ...	52	46	11,884	755	305	242	278	232	179
	ASSAM VALLEY.									
3	Goalpara ...	22	18	2,137	64	27	9	15	11	9
4	Kamrup ...	15	14	1,954	48	32	27	36	31	16
5	Darrang ...	13	10	1,406	143	81	63	52	77	45
6	Nowgong ...	10	9	1,495	22*	23	15	12	14	26
7	Sibsagar ...	15	13	2,143	179	125	107	129	63	90
8	Lakhimpur ...	15	14	1,702	53	107	114	158	146	114
	Total ...	90	78	10,837	509	395	335	402	342	300
	Total for the Province ...	142	124	22,721	1,264	700	577	680	574	479

\*Mauzas.

## IMPERIAL STATEMENT No. XII.—Deaths registered from Plague

Number.	Districts.	Circles of Registration.		Villages.		January.	February.	March.	April.	May.
		Number in each district.	Number from which deaths from plague were reported.	Number in each district.	Number from which deaths from plague were reported.					
1	2	3	4	5	6	7	8	9	10	11
	SURMA VALLEY.									
1	Cachar ...	12	...	1,103	...	...	...	...	...	...
2	Sylhet ...	40	...	10,781	...	...	...	...	...	...
	Total ...	52	...	11,884	...	...	...	...	...	...
	ASSAM VALLEY.									
3	Goalpara ...	22	...	2,137	...	...	...	...	...	...
4	Kamrup ...	15	...	1,954	...	...	...	...	...	...
5	Darrang ...	13	...	1,406	...	...	...	...	...	...
6	Nowgong ...	10	...	1,495	...	...	...	...	...	...
7	Sibsagar ...	15	...	2,143	...	...	...	...	...	...
8	Lakhimpur ...	15	...	1,702	...	...	...	...	...	...
	Total ...	90	...	10,837	...	...	...	...	...	...
	Total for the Province ...	142	...	22,721	...	...	...	...	...	...



*Respiratory diseases in the districts of Assam during each month of the year 1923.*

June.	July.	August.	September.	October.	November.	December.	Total.			Ratio of deaths per 1,000 of population.			Mean ratio per 1,000 of previous five years.	Number.
							Male.	Female.	Total.	Male.	Female.	Total.		
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
68	56	68	64	67	82	123	561	432	993	2·14	1·80	1·98	4·84	1
112	118	109	107	80	140	173	1,001	609	1,610	·76	·49	·63	2·24	2
180	174	177	171	147	222	296	1,562	1,041	2,603	·99	·70	·85	3·25	
11	7	8	5	14	34	16	109	57	166	·26	·16	·21	1·24	3
17	22	30	15	24	32	24	207	99	306	·52	·27	·40	·58	4
61	70	86	57	54	67	44	455	302	757	1·79	1·34	1·58	6·69	5
6	21	20	13	11	13	10	109	75	184	·52	·39	·46	2·98	6
116	100	92	74	117	96	93	718	434	1,202	1·65	1·24	1·46	6·18	7
127	167	116	160	134	131	138	933	679	1,612	2·98	2·48	2·74	8·27	8
338	387	352	324	354	373	335	2,531	1,696	4,227	1·25	·94	1·11	4·13	
518	561	529	495	501	595	621	4,093	2,737	6,830	1·14	·83	·99	3·74	

*in the districts of Łssam during each month of the year 1923.*

[illegible]

## APPENDIX II.

## PROVINCIAL.

*Statement showing details of registration in compulsory areas.*

Compulsory registration area.	1	2	3	4	5	6	Number of deaths registered during the year.		Death-rate per mille.		11	12
							Including deaths in hos-pitals.	Excluding deaths in hos-pitals.	Including deaths in hos-pitals.	Excluding deaths in hos-pitals.		
Population according to Census of 1921.	Estimated births at 286 per 1,000 married women between the ages of 15 and 40.	Number of births registered during the year.	Estimated birth-rate per mille.	Registered birth-rate per mille.	Including deaths in hos-pitals.	Excluding deaths in hos-pitals.	Including deaths in hos-pitals.	Excluding deaths in hos-pitals.	Number of prosecutions under Act IV (B.C.) of 1873.	Number of convictions.		
Silchar	10,204	227		22.25	137	94	13.42	9.21	...	...		
Hailakandi	2,228	37		16.60	38	31	17.05	13.91	1	1		
Sylhet	16,912	492		29.09	383	323	22.64	19.09	6	6		
Karimganj	4,552	110		24.16	77	63	16.91	13.84	18	17		
Maulvi Bazar	3,334	63		18.89	43	36	12.89	10.79	1	1		
Habiganj	5,918	204		34.47	188	153	31.76	25.85	...	...		
Sunamganj	4,881	124		25.40	91	80	18.64	16.39	7	7		
Dhubri	6,707	203		30.26	187	143	27.88	21.32	24	16		
Goalpara	6,212	224		36.05	165	135	26.56	21.73	32	25		
Gauripur	4,311	106	Not available.	24.59	93	93	21.57	21.57	...	...		
Gauhati	16,480	470		28.52	489	334	29.66	20.26	43	26		
Barpeta	11,730	546		46.54	357	348	30.43	29.66	25	23		
Tezpur	7,341	206		28.06	235	184	32.01	25.06	16	14		
Mangaldai	1,023	30		29.32	15	...	14.66	...	15	11		
Nowgong	6,885	203		29.48	194	125	28.17	18.15	11	10		
Sibsagar	5,329	229		42.97	125	102	23.45	19.14	76	44		
Nazira	2,632	145		55.09	56	55	21.27	20.89	51	31		
Jorhat	6,626	157		23.69	118	91	17.80	13.73	10	2		
Golaghat	3,655	98		26.81	75	45	29.52	12.31	17	14		
Dibrugarh	16,007	352		21.99	313	122	19.55	7.62	62	53		
Doom Dooma	1,162	20		17.21	35	35	30.12	30.12	...	...		
North Lakhimpur...	1,966	50		25.43	41	30	20.85	15.26	...	...		
Tinsukia	3,080	65		21.10	31	31	10.06	10.06	...	...		
Total	149,175	4,361		29.23	3,486	2,653	23.36	17.78	415	301		



## GOVERNMENT OF ASSAM.

### The Governor and the Minister of Local Self-Government.

#### Resolution on the Annual Public Health Report of the Province of Assam for the year 1923.

*Extract from the Proceedings of the Governor of Assam and the Minister of Local Self-Government in the Local Self-Government Department, Public Health Branch, No. 2311 L.S.-G., dated the 13th June 1924.*

READ—

The Public Health Report for the year 1923.

#### R E S O L U T I O N .

THE vital statistics of the year under review show a distinct improvement. The increase in the birth-rate was slight, but the death-rate fell from 26·85 per mille in 1922 to 23·54 and the net result was that the natural increase of population rose from 1·58 to 5·28 per mille. The birth-rate still compares unfavourably with that of other provinces, but whereas in 1922 the death-rate was higher in Assam than in any province except one, in 1923 only three provinces recorded a lower rate. Even when allowance is made for the admittedly defective system of registration, the results are distinctly satisfactory. The test carried out by the vaccinating staff indicates that in urban areas the registration was more complete than in 1922, the percentage of omissions detected being appreciably lower in the case of births and deaths. In rural areas, however, the results of the test showed no improvement, Kamrup again having the worst record. Reference was made in last year's Resolution to the improvement in the vital statistics on tea estates. The improvement was more than maintained in the year under review, when a birth-rate of 23·69 and a death-rate of 21·97 were recorded as compared with 27·13 and 25·19 in 1922. The natural increase of population on these estates rose to 6·72, and the Governor and his Minister desire once more to congratulate the Industry on the marked success which has attended their efforts to make conditions on their estates more sanitary. The fact that the death-rate on tea gardens in Assam was lower than the recorded death-rate of any province in India in 1923 proves the care which is now taken of the labour force and should dispel the illusion that tea gardens in Assam are unhealthy.

Another satisfactory feature of the year was the decline in infant mortality, the rate falling from 198·20 per mille to 179·50. The demonstrations that were given in the Baby Welfare Week aroused far greater interest among the general public than was anticipated, and there is every reason to hope that an extension of the campaign will have a very marked effect on the infant mortality of the province. The apathy of the people has hitherto made progress difficult in this and all questions of public health, but if, as now appears likely, this apathy can be overcome, there is hope for the future. It is therefore with pleasure that the Governor and his Minister learn that, with the aid of the Red Cross Association, a campaign is being organized to carry on hygiene propaganda through the agency of the *Kala-azar* Assistant Surgeons equipped with magic lanterns and selected slides. These officers tour in the interior of the districts and are therefore a most suitable agency for the conduct of this campaign. Government trust no effort will be spared to make it a success and that the people will learn to appreciate the importance of observing in their daily life the practical principles of hygiene and sanitation.

2. The mortality from all the principal diseases except small-pox showed a decrease. The death-rate from cholera fell from 2·36 to 0·54, the year being free from any serious epidemic. The mortality from small-pox rose from 0·38 to 0·47, the disease being most prevalent in Nowgong. The question of extending compulsory



vaccination is now under consideration. At present it is in force in urban areas and certain selected rural areas where Village Authorities have been established. From enquiries made by the Government it appears probable that the want of success which has attended the experiment in the selected rural areas was to a large extent due to the failure on the part of the local medical staff to exercise proper supervision and control.

The Government are now considering the possibility of extending the Act to other selected areas or of introducing certain sections of the Act or rules under the Epidemic Diseases Act as an emergency measure in areas where an epidemic appears imminent or has actually broken out.

3. There was a slight decline in the death-rate from fevers, which include *Kala-azar*. The *Kala-azar* returns show 35,071 cases treated with 4,131 deaths as compared with 19,659 cases and 2,292 deaths in 1922. The death-rate was 11.7 per cent. of the cases treated against 11.6 in the previous year. The great improvement that has been effected in the treatment of the disease is shown by a comparison with the figures of 1920 when 38.8 per cent. of the cases treated ended fatally. The increase in the number of cases does not mean that the disease has spread to that extent. What the figures show is that with the employment of an additional staff and the survey of new areas, the disease has been found to be more widely prevalent than was supposed. The increase represents more correct diagnosis rather than an actual increase of disease. The Government referred in their Resolution of last year to the serious menace which this disease represents and outlined the reorganization of the campaign that would be undertaken to deal with it. The details of that reorganization have been explained in a separate Resolution. Measures have been taken firstly to enlarge the special staff considerably so that more treatment centres could be opened and suspected areas surveyed and secondly to secure more complete co-ordination between the Medical and Public Health Departments so as to secure more efficient working and a more adequate supervision. The details are given in the Director's Report, and the Governor and his Minister desire to express their appreciation of the way in which Civil Surgeons and other officers of the district medical staff have grasped the seriousness of the situation and have readily undertaken the additional work which has been entrusted to them. The number of special Sub-Assistant Surgeons was raised from 48 to 79, and the additional expenditure incurred on the campaign in 1923-24 amounted approximately to Rs. 2,85,000. One of the great difficulties with which the staff has to contend is the length of the treatment required to effect a cure. Many patients abandon the course before they are completely cured and free from infection, and it is often difficult to trace them and bring them back to the treatment centres. Experiments are now being made with a new and much shorter treatment, and if the results realize anticipations, this difficulty will be removed. The Government have spared no measures to deal with this scourge, but it has become evident that curative measures alone will not stamp out the disease. It is necessary to know the cause of the disease and the method of its propagation so that measures of prevention as well as of cure can be adopted. The Governor and his Minister have therefore heard with satisfaction that the proposal which emanated from this Government for the institution of an expert research enquiry has been accepted by the Government of India and that a Research Commission has been appointed to prosecute the enquiry in Assam during the current year. The health and prosperity not only of this province but of other parts of India depend largely on the findings of that Commission and the results of their enquiry will be awaited with anxiety.

No extension of the anti-malaria campaign could be undertaken, but the operations at Pasighat and Haflong were continued. The measures taken at Pasighat have effected a great improvement in the health of that station. The results of the special mosquito investigation in Shillong have not yet been published. The School of Tropical Medicine and Hygiene, Calcutta, propose to carry out a malarial survey of Assam and a preliminary survey has already been undertaken. The Government of Assam welcome this research which will be of great value to the province.

4. Attempts to enlist the aid of the International Health Board of the Rockefeller Foundation in a campaign against ankylostomiasis or hook-worm have so far not proved successful.

Another disease which is believed to be making headway in Assam is leprosy. A leprosy survey of the province will be undertaken, as soon as the funds and staff required for the work can be found.

5. There was a remarkable fall in the sale of quinine, the number of treatment parcels sold falling from 10,603 to 4,589. This is attributed partly to the increase in the cost price introduced in 1922, partly to a restriction of the supply to areas where



there are no dispensaries or druggists' shops and partly to a more healthy year. A further factor is doubtless the fact that many cases which in former years were treated for malaria are now correctly diagnosed as *kala-azar*.

6. The expenditure incurred by Municipal institutions on sanitation rose from Rs. 3,82,447 to Rs. 4,06,595, the expenditure on water-supply increasing by Rs. 20,246 and on conservancy by Rs. 8,427. The water-works in the principal towns were again inspected during the year by Mr. Shaw, Executive Engineer, who has made many valuable suggestions for improvement in their working. The Municipalities concerned should feel greatly indebted to Mr. Shaw for the expert advice which they thereby obtain gratis and the Government trust that they will do all that is possible to carry out his recommendations. It is with regret that the Governor and his Minister have to record that the expenditure of Local Boards on water-supply fell from Rs. 1,60,610 to Rs. 1,07,243. It is clear that unless some means is found of increasing the resources of Local Boards, these important local bodies will find themselves unable to carry out important works of public utility. They already receive very liberal subventions from provincial revenues, amounting to more than 50 per cent. of their total income, and they cannot look for more assistance from that quarter. The matter has already received the careful consideration of Government and the issues have been laid clearly before the Boards. Their replies are awaited with interest.

7. The office of Director of Public Health was held by Lieutenant-Colonel T. C. McCombie Young, I.M.S., from the beginning of the year until the 16th November, when he proceeded on leave. Colonel C. H. Bensley, I.M.S., Inspector General of Civil Hospitals, held charge for a few days in addition to his own duties and was relieved on the 1st December by Major T. D. Murison, I.M.S., to whom the Government are indebted for an interesting report. A Public Health Board consisting of the Inspector General of Civil Hospitals and the Director of Public Health, was constituted during the year and the value of this Board in co-ordinating the work of the Medical and Public Health Departments has already been clearly proved.

---

ORDER.—Ordered that the Resolution be published in the *Assam Gazette*.

By order of the Government of Assam,

G. E. SOAMES,

*Second Secretary to the Government of Assam.*







